

POWER COMPUTING

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Power Clock with thru'port **£17.95**

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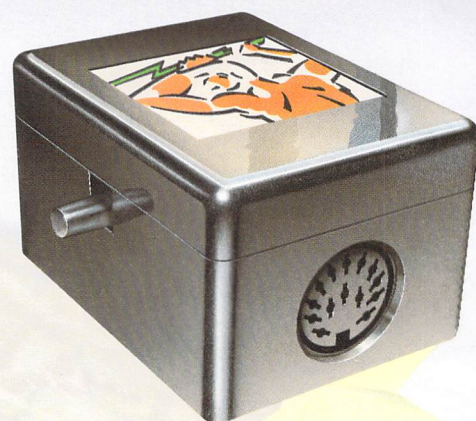
External 5.25" disk drive **£95**

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Werks **£24**
Knife ST **£29**
PC Ditto **£29**
Neodesk v3.0 **£34**
Devpac v3.0 **£69.95**

Send your order to Power Computing Ltd, Unit 8 Railton Road, Woburn Road Industrial Estate, Kempston, Bedford MK42 7PN
Ring your credit card order through on **0234 843388 (10 lines)** or Fax on **0234 840234** Technical helpline **0234 841882**

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POWER COMPUTING

Atari ST Power Scanner



Following the huge success of the Amiga Power Scanner, we have been hard at work to produce a product of the same high quality for the Atari ST, and are proud to present the new Atari ST Power Scanner.

This compact unit plugs into the Atari cartridge port and allows scans to be taken at up to 400dpi using the supplied M105-PLUS hand scanning head.

The unit is supplied with the 'PowerScan ST' software-a powerful and user-friendly utility boasting features normally only found on far more expensive products including:

- | | |
|--|--|
| Auto scan rate detect | Works in all three resolutions |
| Real time greyscale scanning | Save in a variety of picture file formats |
| Monochrome text or 16 greyscale levels | High resolution printer driver with more drivers forthcoming |
| Full image and clipboard editing features | GEM menu and fast icon driven controls |
| Scan join feature for taking wide scans | Keyboard shortcuts |
| Cut, paste, magnify, flip, rotate, invert, crop, edit and many more editing features | OCR text recognition coming soon |

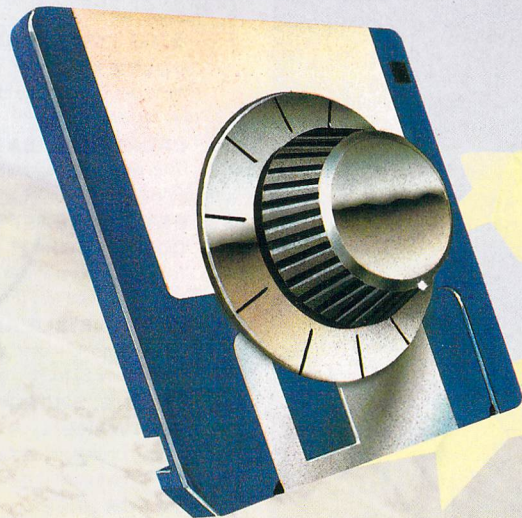
Watch out for our regular software updates with many exciting new features, available only to registered users **£99 inc.VAT**

Special upgrade offer!

If you consider your scanner system to be inferior to the Power Scanner, we will happily upgrade your software and interface for only **£49.95**

(Power Scanner is compatible with most scanning heads.)

The Ultimate Cartridge



The Ultimate Cartridge will break into any Atari ST program. Whether you're a programmer, hacker, games player, or just curious about your Atari ST, The Ultimate Cartridge gives you the power that you need. Updates available with new software.

- | | |
|-------------------------------|-------------------------------|
| Break into any program | Load and save graphic screens |
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| Search memory | Disk analyser |
| Print memory | Examine formats |
| Disassemble | Format analyser |
| Disassemble to disk | File editor |
| Edit memory | Directory editor |
| Search for graphics | Formatter |
| Search for sprites | Break and restart function |
| Edit screen configurations | Search for infinite lives |
| Set up colour palettes | Look for music |
| Alter plane configurations | Play music |
| Load and save screen displays | Load and save music |
| Run external TOS programs | Search for soundtracker music |
| Load TOS programs | Search for sound samples |

The cartridge the ST has been waiting for **£25 inc.VAT**

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Andy Hutchinson

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Answers • Amstrad Action
Your Sinclair • Amiga Format
Amiga Power • Amiga Shopper
PCW Plus • Total!

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Proof positive that all good magazines have
to end somewhere. So, this is our end bit.

SCREENPLAY

The latest ST games reviewed and rated - page 69

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about these new releases

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THE GREAT STF COVER DISKS



BACK STROKE, BREAST STROKE, BUTTERFLY AND CRAWL. DOGGIE PADDLE, BELLY-FLOP...

Erm... you can do them all. Learn to enter water
gracefully with this diving simulator - an exclusive
demo from *Empire's International Sports Challenge*.

CREATE THE GAMES

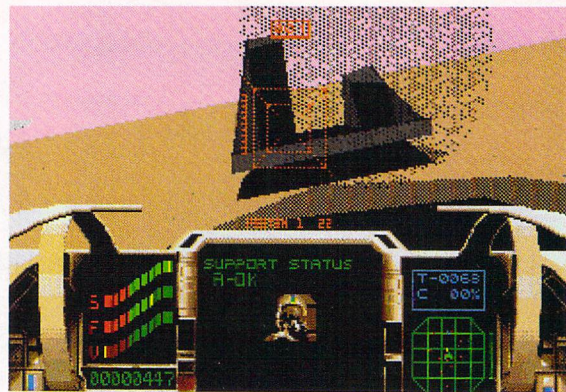


YOU'VE BEEN
DREAMING
OF BUT
NEVER
FOUND

We detail
all those
little secrets that go
into making a superb game,
er, superb. Check out... **page 30**

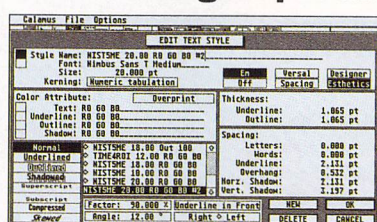
EPIC: STONKING OR STINKING?

Three years in the making for
Ocean's 3D space blaster. Turn to
page 70 for the shocking verdict

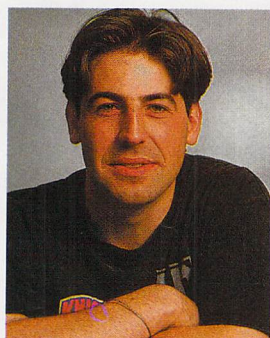


THE BEST DTP PROGRAM EVER?

Calamus SL gets put through its



paces in
our most
rigorous
test
ever...
page 112



HELLO, WORLD, THIS IS YOUR EDITOR SQUEAKING

terly Editor at large. I'm pleased to be back at **STF**, particularly since I finally get to sit in the extra-absorbent big

If you're remotely observant, you've probably noticed that the face on the left has changed somewhat. Apart from being far more attractive, it also belongs to a brand new Editor, a man like no other man. That man is - er, me, Andy Hutchinson, erstwhile **STF** News Editor and lat-

chair, but more than that, because so many brilliant things are happening in the Atari world.

Well over a year ago, I wrote a story about a machine called the Falcon. The rest of the computer press cast doubt on the story, but now we're finally going to see the new machine. If my sources prove right - and they haven't been wrong yet - the Falcon is going to be the machine to take Atari through this decade and into the next. All the developers, programmers and cleaners at Atari that I've spoken to are massively impressed with the new machine. If we're hearing things right at **ST FORMAT**, the Falcon is the machine to put Atari back at the top of the league table of home computer manufacturers. That kind of news is important to us and to you. It means that you'll be able

to buy machines which can perform practically any task you turn them to, be it games, business, productivity or just recreational software.

ST owners have known for a long time that, with the right machine, you can play superb games and get involved in more serious activities. Ignore the console boom - those puffed up custom chips will disappear within the next two years just as rapidly as they materialised. If you want long term use out of your hardware, make sure you stick with your **ST** or Falcon - and stick with **ST FORMAT**. We're number one and, with your help, we're going to stay there. Remember, when buying hardware or a magazine, avoid pale imitations.

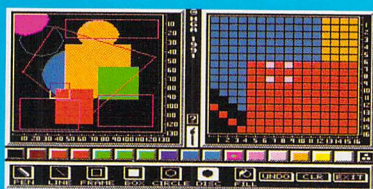
Andy Hutchinson, Editor.

COMPLETELY YOURS!

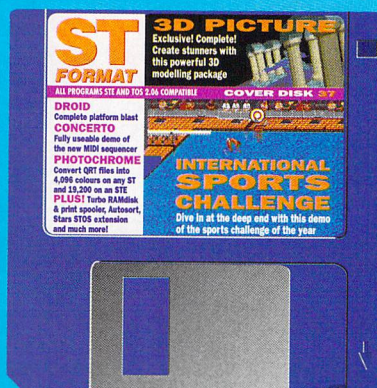


This month we bring you two brilliant packages: **STOS** from Mandarin and **Animaster** from Home Grown Software. **STOS** is one of the best BASIC packages available - with it you can program games, demos and utilities quickly and easily. **Animaster** is a comprehensive sprite program which enables you to produce stunning animated characters for your games!

● With **Animaster** you can create horrifically grim creatures, spanky heroes or heroines or even lush walking plants. Like, let your imagination run riot, man...

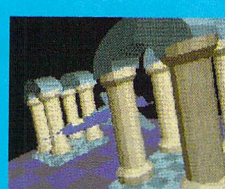


AND THERE'S MORE...



Don't miss the huge range of goodies on this month's bulging Cover Disk:

- **International Sports Challenge** - exclusive playable diving game from Empire's new release
- **3D Picture** - Brilliant 3D modelling package to create brave new worlds!
- **Concerto** - demo of the superb new MIDI sequencer! Plus: six other essential programs to help you get more from your **ST**!



● Look at the columns on that! Worlds created while you whistle. **3D Picture** - smashing!

TURN THE PAGE NOW!

Cover Disk 37

It's small, it's made of plastic, it's blue and there's a bit inside it that goes round and round. But after a great struggle we managed to prise it away from Chris Lloyd long enough to let him loose on this month's bulging Cover Disk. Once again it's packed with stacks of top software from around the world! You can now learn to dive, create stunning 3D pictures, blast away aliens, make your own starfields and loads more...



In a program-packed night...

International Sports Challenge – Playable preview of the new sports simulation from Empire. **Page 6**

3D Picture – Exclusive new 3D modelling package. **Page 7**

● For a step-by-step guide to creating your own 3D pictures, see page 50

Droid – Complete platform blastorama. **Page 8**

Concerto – Fully useable demo of the new sequencing package from Micro-deal. (MIDI instrument not supplied.) **Page 10**

● Don't miss this issue's instalment of our music series, page 121

PhotoChrome – Amazing picture converter with an unbelievable number of colours. **Page 9**

Stars – Complete new STOS extension to add scintillating starfields to your STOS programs. **Page 12**

● STOS is yours on this issue's marvellous second Disk – details, page 17.

GFA Chaos listings – More fractal mayhem in GFA Basic. **Page 9**

● This issue's fractal programming feature is on page 117.

Turbo – Reset-proof and configurable RAMdisk and print spooler. **Page 12**

Autosort – Knocks those AUTO programs into line. **Page 9**

GFA Draft Extras – A couple of goodies to go with the stunning drawing program GFA Draft Plus. **Page 7**

● GFA Draft Plus 3 was yours with STF 34. If you missed it, see page 40.

Back-Up – Simple and quick backup of your Cover Disk. **Page 7**

International sports challenge

BY: EMPIRE

RESOLUTION: LOW ONLY

FOLDER: SPORTS

FILES: DEMO.PRG

GET STARTED WITH: DEMO.PRG

No sane person would do it – jump from a height of five metres into a pool of water. Athletes, however, are a breed apart. Not only do they jump but they spin around in the air as they do it. As if that wasn't enough, they group together and have jumping into water competitions. On the Cover Disk is a playable snippet from Empire's new simulation of jumping into water and other stuff like that, *International Sports Challenge*. The full sim features six events, from shooting things and riding on horses to this one – jumping into water.

Open the SPORTS folder and run DEMO.PRG by double-clicking on it. You can select from three different dives: one metre springboard, three metre springboard and the horrifying five metre highboard. Move the joystick to select your choice and hit <Fire> to get going. At the top left of the screen is a white circle with a pulsating red circle. This is the power meter. Hit <Fire> again to stop it. The larger the circle you end up with, the higher the jump. A grey sphere starts twisting and turning – use the joystick to control the little white one. See your chap spinning about aimlessly? That's because the balls aren't lined up properly.

After you've done your best, you have to go along to see the judges and see what scores you've managed to get. Getting it right takes quite a bit of practice but does give you a little rush as you finally manage to make that perfect dive.



● The moment of sheer terror just before you dive. You can back out now – just turn round and run away. Nobody would hold it against you, much. Your family would probably support you and you could wear a bag on your head in public for a couple of years.



● Er, things aren't looking too good at this point. You don't seem to have mastered one or two important skills such as hitting the water properly. Looks like one stinging belly-flop in the making. Line up the little balls to adjust your position.

CREATE YOUR OWN GAMES WITH THIS MONTH'S SECOND DISK

EVERYTHING THAT REALLY COUNTS – READ THIS BIT FIRST!

Safety first (and second)

To keep your *STF* Cover Disk absolutely safe, keep it write-protected by moving the little black tab so you can see through the hole. Nothing can now be written to your Disk, so there's no chance of you accidentally writing over or deleting any precious data. This also keeps your Disk completely safe from viruses. The Disk is guaranteed virus-free, so don't take any chances.

Preparation second... er, third

Space on the Cover Disk pages is limited, so you may often find text files on the Disk with more information. These have the file extension DOC – the three

letters after the full stop. It's always a good idea to read these for more information on the program. Just double-click on them and select Show to display the text on-screen. If you find that half the text disappears off the right-hand side of the screen when you try to read a DOC file in low resolution, then change to medium resolution and try again.

One easy way to back it up

To keep your valuable *ST FORMAT* Cover Disk safe you should back up the disk, so if anything should go horribly wrong you've still got the original.

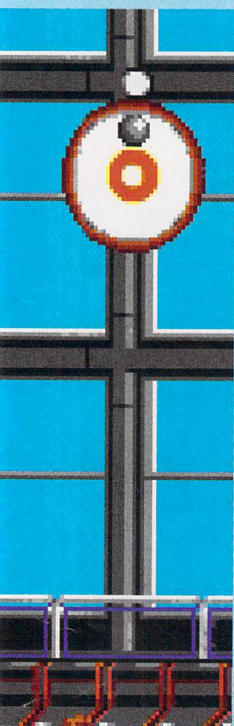
Because we use a special disk for-

mat to squeeze even more goodies onto the Disk, you can't do a direct disk to disk copy – you can't just drag the Floppy Drive A icon over the Floppy Drive B icon. But fear not: we've made life easy for you with a specially-commissioned backup program. Just follow the instructions below and you can't go wrong! Now there's no need to risk damaging the data on your original Cover Disk or losing it ever again!

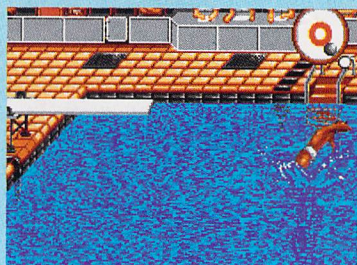
● **Note** that some programs are compressed to fit on the Disk and cannot be run directly from it. Follow the instructions for each program in these Cover Disk pages and everything is sure to come up roses.

Single-sided problems last

ST FORMAT is now using a double-sided disk format. If you are one of the few *ST* owners still with a single-sided internal drive and no external drive, then you're out of luck – you can't read *STF* Cover Disks, or, for that matter, virtually any current software. This is because single-sided drives are now obsolete, and it is well worth upgrading. Replacement drives are cheap – as little as £35 – and easy to fit. At a stroke you can double the storage capacity of your disks. We brought you a detailed guide to fitting new internal drives in *STF* 32 – turn to page 40 to order it if you missed it.



● **International Sports Challenge** features six events. On the Cover Disk is a playable demo of the diving event. Here you are beyond the point of no return, about to leap spectacularly in the air and gracefully plunge into the water like the little sea-nymph you are. Ha! Make a complete fool of yourself in front of family and friends, more like.



● **The wet part, falling into the water, is easy. Doing it with any grace and precision is the less than simple bit. Better luck next time. If you click on Demo when you're presented with your diver, then some show-off does it perfectly before your effort.**

GFA Draft extras

BY: GFA

RESOLUTION: HIGH OR MEDIUM

FOLDER: GFADRAFT

FILES: DRAFTDXF.PR, PLOT-TERS.TOS

TO GET STARTED: SEE BELOW

STF 34 brought you the slightly brilliant complete *GFA Draft Plus 3* package, fabulous for plan drawing, 2D illustration – all sorts. On the next issue came utilities to convert between DXF format pictures and *GFA Draft* ones. Thanks to cosmically malevolent forces beyond our control something went horribly wrong with the duplication of the prog- gie to convert DXFs into *GFA Draft*. To set things straight, here he is again. You need to copy DRAFTDXF.PR onto a formatted blank disk along with GFADRAFT.INF, DR3DXF.BAS and a folder with the pictures to be converted. Double-click on DRAFTDXF.PR and off you trot. Assign the levels you want to convert, choose whether or not you want line widths displayed and any zoom factor, then click on "Start" and it does the biz.

When we brought you *GFA Draft Plus 3*, we also included support for over 50 different printers. But were you satisfied? Well, yes, actually, you were. But some people might want to use those old-fashioned plotter things to draw their pictures on. Also in the GFA-DRAFT folder is a compacted file with all the plotter drivers anybody is ever likely to need. To get at these, all you have to do is copy the file PLOTTERS.TOS to a blank formatted disk and run it. It automatically decompresses a folder full of the little devils ready to install into *GFA Draft Plus*.

Cover Disk Back-Up

BY: BRIAN TILLEY

RESOLUTION: ALL RESOLUTIONS

FOLDER: BACK_UP

FILES: BACK_UP.TOS,

BACK_UP.DOC

READ: BACK_UP.DOC

GET STARTED WITH: BACK_UP.TOS

Alright, hands up all those who're backing up those precious *ST FORMAT* Cover Disks. No? You'll regret it if a freak gardening accident spoils your Disk. Doing it the old way – dragging folders to drive B and swapping disks – is too much of a bother, so here's a clever little utility that does the whole business for you. Now before you do anything, write-protect your original Cover Disk – move the little black tab so you can see through the hole. This stops anything nasty happening, because nothing can be written to it. Now get a new disk ready – it doesn't have to be formatted (*Back-Up* does that for you), but ensure you don't mind losing

all the data on it. Then double-click on BACK_UP.TOS to run *Back-Up*. From the menu press <1> and off you go, swapping disks when prompted.

To minimise disk swaps, *Back-Up* uses all your *ST*'s available memory. If you have over 1MByte of RAM you can do everything with one disk swap. The source disk is the disk you are making the copy of – the Cover Disk. The destination disk is the intended back-up disk. If you have two drives, drive A is the source and drive B the destination.

Back-Up can also be used to back up other disks. To see if this is a goer with a particular disk, load *Back-Up*, press <2>, and then, when prompted, insert the disk you want to copy. *Back-Up* tells you if it can do the job. Don't expect to be able to copy commercial games, though – they use all sorts of clever tricks to stop you doing this. And copying them is illegal.

Now there really is no excuse for not doing a backup – it saves a heap of trouble if you should ruin the disk.

3D picture

BY: JOHN ZEGERS

RESOLUTION: LOW ONLY

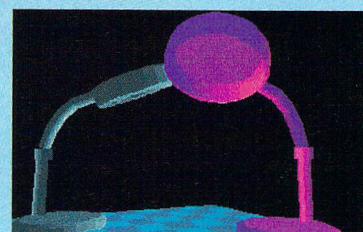
FOLDER: 3D

FILES: 3DPICTUR.PR AND 20

EXAMPLE FILES

GET STARTED WITH: 3DPICTUR.PR

You want to create complex 3D objects, then render them in colour with full shading? You'll find this program will come in handy then. It creates complex 3D objects and renders them in colour with full shading. Sounds seriously funky. Open up the 3D folder and run 3DPICTUR.PR and click on "Load File" to load in the jazzy examples. There are

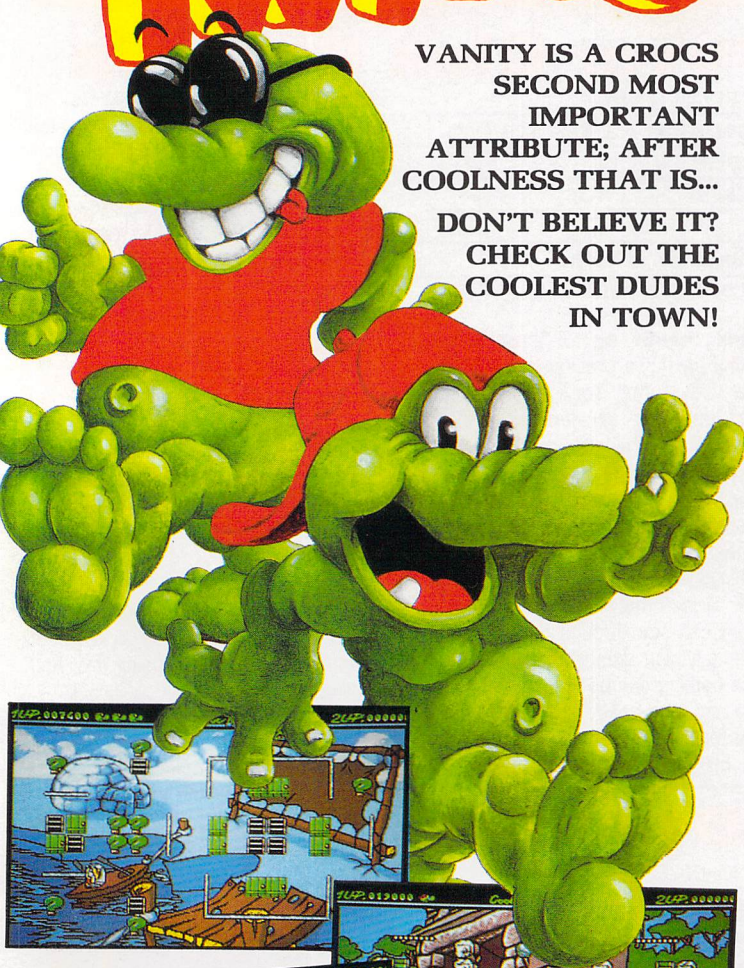


● **With a little modelling, a little rendering and a copy of 3D Picture, screens like this can be yours too. Makes you come over all tingly really.**

all sorts of funky features – turn to page 50 for an in-depth tutorial by our very own "Mr 3D" himself, the indomitable, the outstanding, the one the only... er, whatsisname. You know the bloke we mean...

– SEE PAGE 17. NEXT ISSUE: YET MORE COMPLETE SOFTWARE!

The Cool Croc Twins



VANITY IS A CROCS
SECOND MOST
IMPORTANT
ATTRIBUTE; AFTER
COOLNESS THAT IS...

DON'T BELIEVE IT?
CHECK OUT THE
COOLEST DUDES
IN TOWN!



- GUIDE PUNK AND FUNK THROUGH 60 LEVELS OF MAYHEM
- 10 WORLDS TO EXPLORE, EACH WITH BRILLIANT FULL COLOUR BACKDROPS AND UNIQUE BAD GUYS.
- THE FUNKIEST, PUNKIEST SOUNDTRACK IN TOWN.
- BRILLIANT SIMULTANEOUS 2-PLAYER MODE.

ARCADE MASTERS

COVER DISK

Droid

BY: MILES P LORD

RESOLUTION: LOW ONLY

FOLDER: DROID

FILES: DROID.PRG, DAT1.DAT,
DAT2.DAT, DAT3.DAT, DAT4.DAT,
DRO.DAT, EXPSND.DAT, FOR.DAT,
MAP.DAT, README.DOC

READ: README.DOC

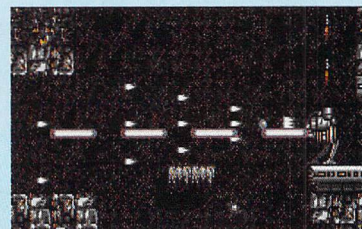
GET STARTED WITH: DROID.PRG

Completely questionable ethically and spiritually of course, but we all love a spot of destruction, don't we? A bout of mindless alien shooting with interesting arrays of weaponry. *Droids* is just that – a complete game involving platforms, robots, power-ups and a humungous amount of shooting. Open up the DROID folder, double-click on DROID.PRG and prepare for hostilities. You control a little walking chap using the joystick. You can get a boost jumping-wise by crouching down first. You start out – horror of horrors – without a rod. Luckily there's one not too far away.

Hidden around the gaff are electronic key devices to get you past the locked doors. Trying to stop you are a nasty collection of death-dealing gun emplacements and droids – these of course hold no fear for you, right? You eat their sort with milk and sugar for breakfast. If, after you've blasted them



● A tricky cave early on. The key you need is past a battery of wall lasers. A new skill you recently picked up comes in real handy here. It's called ducking and is used by all the most successful droids without any shame whatsoever.



● Keep your head and grab those bonuses and you too could get hold of a droid like this – three-way cannon, lasers, bomb thrower, upward firing thingy and realistic hair.

into oblivion, the little alien swines drop an orangey-looking thingy, grab it – it's a bonus. Bonuses range from a few extra points to heavyweight lasers and bomb throwers. Get old trusty plugged in and get out there! We're right behind you – hiding.

THRASH METAL

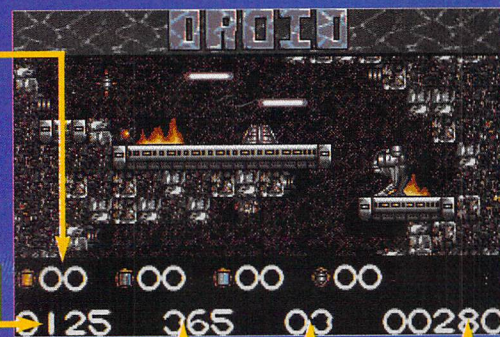
That's you – the little metal fella with the legs and the large guns. Ahead are tortuous caverns crawling with dangerous technology that's taken a dislike to you in a big way – the sort of big way that involves shooting at you a lot. Quite why they take this anti-social attitude is a mystery – alien scum are like that. *Droid* is a serious arcade blaster – non-bogus in a big way.

THE KEYS COLLECTED

Available in three delightful colour schemes designed to match any interior.

ENERGY

When this hits zero you find yourself in – quite literally and in a most real way – a "made dead situation." Try to avoid this uphappy state by dodging bullets. Handy safety tip there. Look out for the tokens with an "E" to top it up.



AMMO

Run out of this and it's Trouble City Arizona for you. Tokens confusingly marked with an "A" provide the necessary.

LIVES

Get trashed and it's not all wasted – you get a few goes before having to start all over again.

SCORE

Bringing death to the aliens brings points. And what do points make? Points make you score that bit higher than your friends.

PhotoChrome

BY: DOUGLAS LITTLE

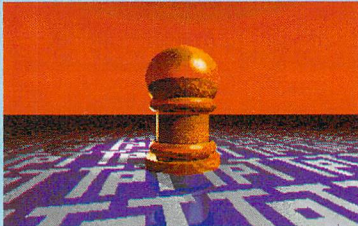
RESOLUTION: LOW ONLY

FOLDER: PCHROME

FILES: PCHROME.DOC,
PCHROME.PRG, PCSVIEW.DOC,
PCSVIEW.PRG

READ: PCHROME.DOC,
PCSVIEW.DOC

GET STARTED WITH: PCHROME.PRG



● The works – 19,200 colours on an STE using a special palette switching technique. The source picture needs to be a 24-bit picture. The result is some of the best graphics you'll see on an ST without hardware modifications.



● Rather silly subject but impressively rendered. *PhotoChrome* strikes again! Look at those colours – better than that PC-contemptible VGA effort, and without all that expensive hardware too.

Stand by to be amazed! *PhotoChrome* is picture convertor with real muscle. Back in the vague mistiness of time and *STF* 33, a challenge was issued: write a program capable of taking a file produced by the QRT ray-tracer (which was yours complete on Cover Disk 33) and displaying it using all of the STE's glorious 4,096 colours. *PhotoChrome* does all of that and a lot more. It is able to load QRT .RAW files, 24-bit .IFF files and Rombo's *VIDI ST* .RGB files. It then does some terribly clever things with colours and outputs your pictures in any one of six flavours, ranging from the standard *Spectrum*

512 screens – 512 colours from a palette of 512 – to the faintly incredible *Photochrome* format with 19,200 colours from a palette of 32,768. This is of course impossible. In between the two are the PCS and super HAM modes.

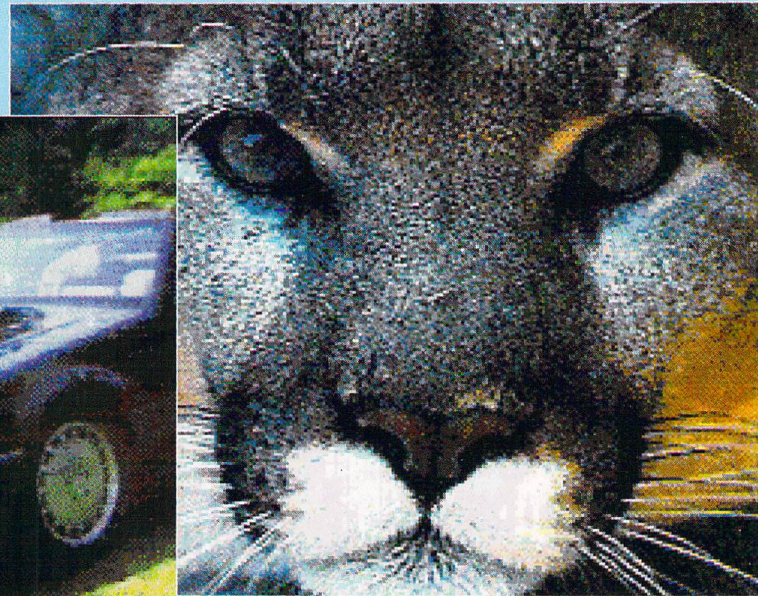
There are a few options to fiddle with: how many of the colour registers to use in *Spectrum* pictures and which if any method of dithering. The sync rate on your monitor can be changed

too, improving the flash QRT conversions. Click on the helpfully named "Help" button for advice on which options to use.

Once you've created your masterpieces you can view them using *PCSVIEW.PRG*. Full details on both programs are in the documentation on disk. The results are stunning! Not literally, of course – that would be a health hazard – but visually stunning in a metaphorical sort of way.



● "Phoar, look at the curves on this baby, eh! I'd like to ride in that! Bet she really goes!" What is it with this fast car fixation? Psychiatrists have a theory which... er, perhaps we won't go into here. Hint: trousers.



● *PhotoChrome*'s super HAM mode gives you the opportunity of looking at 4,096 colours on any ST. Isn't she an absolute beauty? Go on, count all those shades!

Autosort

BY: EUGENE SOTHAN

RESOLUTION: MEDIUM OR HIGH

FOLDER: AUTOSORT

FILE: AUTOSORT.PRG

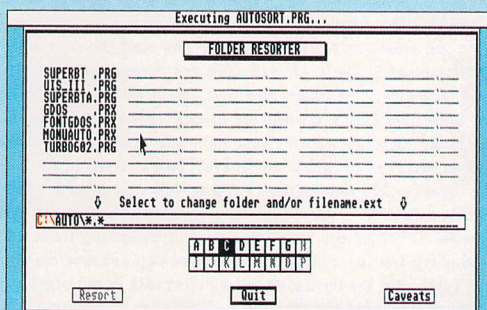
GET STARTED WITH:

AUTOSORT.PRG

The order in which files appear within a folder when you open a window on your Desktop isn't the order they are actually stored in on the disk. This isn't really a problem, except for programs in your AUTO folder. These are programs with the filename extension .PRG, in a folder called AUTO on the root directory of your boot disk (that is, not in any other folders), so they are run automatically when you switch on your ST. These are run in the order they are stored on disk and the running order can affect the their function. Some are fussy and need to be run

first (or last) or else they cause a commotion – last month's *Super Boot* is one. You could delete the folder and start again, copying programs into the folder in the correct order, or you could use this 'ere *Autosort* number.

Just run it and it shows you your AUTO folder. Simply click on the programs and drag them into the right order, then hit "Re-sort." Zappo! It's done in the blink or two of an eye. You've just saved a yourself a lot of copying and deleting hassle!



● *Autosort*, a lifesaving utility! Well, not actually lifesaving as such, but, er, handy. Sorts out the contents of your AUTO folder in a trice.

GFA Chaos listings

BY: CONRAD BESSANT

RESOLUTION: LOW AND HIGH

FOLDER: CHAOS

FILES: LIST1_LO.GFA, LIST1_HI-
.GFA, LIST2_LO.GFA, LIST2_HI.GFA,
LIST3_LO.GFA, LIST3_HI.GFA

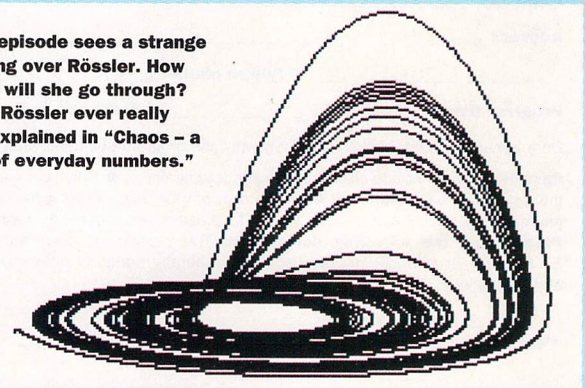
TO GET STARTED: SEE BELOW

The continuing story of the fractal family, those wacky mathematical formulae. This month we take a look at

those fascinating Lorenz and Rössler attractors. These BASIC listings need to be loaded into *GFA Basic* v3.5, which was thoughtfully stuck to the front of *STF* 35 with sticky tape. You probably know by now that you should immediately turn to page 40 if you missed this cracker of a program.

To find out more about all the fractal stuff just sidle quietly up to page 115, then quickly turn the page and there it is.

● This month's episode sees a strange attraction coming over Rössler. How many iterations will she go through? Will Lorenz and Rössler ever really meet? All this explained in "Chaos – a complex story of everyday numbers."



PROBLEMS? WHERE TO FIND HELP

1. MY STF COVER DISK WON'T LOAD!

Before you do anything else, check that you don't have a single-sided drive (one older than 1988, that can't format any disks to more than 360K) – they can't read new *ST FORMAT* Cover Disks. Single-sided drives are obsolete and it's well worth upgrading. Replacement drives are easy to fit and cost as little as £35. We covered fitting new internal drives in *STF* 32 – turn to page 40 to order a copy if you missed it.

Drive okay, but still no joy? *ST FORMAT* duplicates hundreds of thousands of Disks every month. Inevitably a few are defective or damaged in some way – the Disk just won't load, or you can't open a window at all, or there's nothing in it, or the folder names are gobbledegook. It doesn't happen often, but if you're unlucky, sorry. You're guaranteed a free replacement if you return the Disk to:

ST FORMAT August Cover Disk Returns, TIB plc, 36-50 Adelaide Street, Bradford, Yorkshire BD5 0EA.

Enclose a sturdy self-addressed envelope (unstamped – we'll pay the postage) and a brief letter explaining the problem. TIB promise to replace your defective Disk within one week of receiving it. (If you're worried about trusting your precious Disk to the mails, the Royal Mail's Recorded Delivery service costs only 30p on top of the normal postage.)

Please don't send your defective Disk to any other address – we have no stocks of Disks in Bath.

2. THIS COVER DISK PROGRAM DOESN'T LOAD!

If only part of your Disk won't load, TIB invite you to ring their Cover Disk Helpline and talk through your problem before you send back a perfectly good Disk. Telephone 0274 736990 during normal office hours and ask for Sam Hiah, *ST FORMAT* Cover Disk Helpline.

3. I CAN'T WORK OUT THIS COVER DISK PROGRAM!

Your Disk seems okay, everything loads, but you've got a problem with one of the programs. Make sure you've read all the relevant Cover Disk pages and any document files on the Disk. Try consulting your ST Owner's manual – that may have the information you need. Still got a problem? Then give us a ring on Wednesday afternoon. Telephone the *ST FORMAT* Cover Disk Hotline ☎ 0225 442244 on Wednesday 2 – 6 pm only.

We don't write the Cover Disk programs ourselves and don't know as much about them as the programmers, but we'll do our best to sort your problem out.

Please note that this line is for Cover Disk problems only. If you have any other queries, read on!

4. I HAVE A PROBLEM WITH THIS OTHER PROGRAM I'VE BOUGHT!

The best place to start is the distributor of the program. Most software houses run some kind of helpline service – check the bump that came with your software for the number.

5. I'VE STILL GOT AN ST PROBLEM!

If you've still got a problem – you suspect your machine may be faulty, or you're not sure about some procedure, or you need an answer to a more general query – then you have two options.

- Ring the official Atari Helpline ☎ 031 332 9323 on any weekday 6 pm – 11 pm.
- Write to ST Answers using the Freepost coupon on page 62 – you don't even have to pay postage! – and let *ST FORMAT*'s team of experts tackle your problem in the pages of *STF*. We guarantee to reply to every query we receive on that form as soon as space is available.

FAME & FORTUNE AWAIT YOU

We'll pay well for your software – games, utilities, demos – anything good, original and short. If you've written anything worthy of *STF*'s Cover Disk, send it with this form and full documentation to: Chris Lloyd, *ST FORMAT* Cover Disk Editor, 30 Monmouth St, Bath, Avon BA1 2BW. Then please be patient: we get heaps of submissions, and we try to give them all a fair testing!

Name

Address

Daytime phone

Program title Total size in K

On a separate sheet, explain concisely what the program does and what's great about it.

Remember to: ● Include on-disk and paper documentation ● Write your name and address on the disk ● Use a virus-free disk ● Keep a copy of your program, because contributions are non-returnable ● Enclose wads of cash. We pay for programs we use, but the next round's on you...

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I hereby agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed

Concerto

BY: MICRODEAL

RESOLUTION: MEDIUM ONLY

FOLDER: CONCERTO

FILES: ICONS.CPT, DEMO.DOC,
CONCERTO.INF, CONCDemo.PRG,
F_S_BACK.SNG

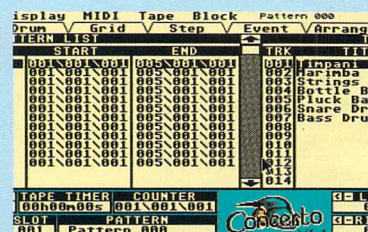
READ: DEMO.DOC

GET STARTED WITH:

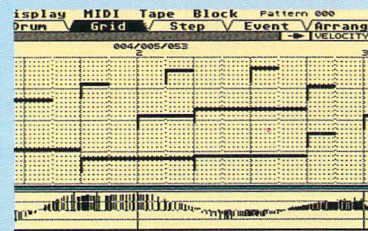
CONCDemo.PRG

Sequencing is the thing with musos these days, and the machine to do it on is an ST. Sequencing uses your ST to control synths, drum machines or anything else which has MIDI ports – that's Musical Instrument Digital Interface when it's out. Microdeal have just released an absolute cracker of a sequencer and we've managed to blagg a working demo for you – all you need to add is a MIDI synth or other MIDI instrument. Read the text file DEMO.DOC for a quick introduction to what to do, then run the CONCERTO.PRG nestling inside the CONCERTO folder. All that's missing is the Save function and a few extras.

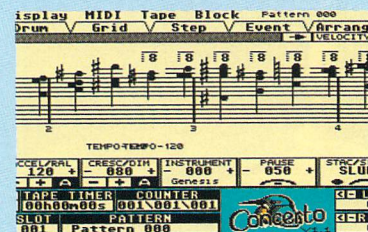
Hit the File menu and load in the demo song F_S_DEMO.SNG. There are far too many features to go into in any depth here – the complete package comes with a 100-page manual. But put extremely simply, *Concerto* provides you with all the swishy functions so as to give you complete control over your instrument, as it were. The whole thing works with an easy system of windows and menus, so just experiment, enjoy and look out for the definitive *STF* review coming soon.



● *Concerto*'s main screen, with the demo song loaded in. The controls that look like they're taken from a tape-deck work as you would expect. To get to the other screens click on the titles just below the menu bar.



● The grid screen. See those bars? They're notes, they are. The slider at the left of the window selects the octaves. Click and drag with the mouse on the grid to enter notes.



● The score window. Select the edit mode at the top right and click on the main window to get editing. There's a mass of other goodies from the rows of icons below the main window.

HE STEPS, HE SCORES, HE WRITES MUSIC

Concerto makes a dazzling array of functions available, all neatly arranged in nine helpful windows. A huge variety of options is accessible from the drop-down menus as well, all fairly self-explanatory – but remember that not all are available in this demo version.

● **Main window.** Displays a list of up to 100 Patterns, including start and finish bar positions – to edit any Pattern's name, you first click on it. Also a track list, showing 24 Tracks in total, with MIDI channel settings and Status (On or Off).

You can copy or delete Patterns or Tracks using the mouse: click and hold down the mouse button and drag a Pattern or Track to another slot to copy it or to the Trash can to delete it.

● **Score Editor.** Make changes to Notes, Tempo (including Accel/Ral), Cresc/Dim, Instrument or Program, Pause, Stac/Slur. Edit modes selectable include Insert/ Delete (also toggled with the right mouse button), Info and Select Block.

The Velocity Bar at the top right enables you to set the velocity (volume) of each individual note you insert on the score, from 1 (lowest) to 127 (highest).

● **Drum Machine.** Use this if your synth has a percussion section.

● **Grid Editor.** Ideal if you can't read music. Same functions as Score Editor. To insert a note you just move the crosshair to where you want the note, click and hold down the left mouse button, drag to the length you want and release the button. A right button click while you're dragging aborts the insert; otherwise a right click toggles between insert and delete modes.

● **Step-Time Editor.** Enables you to enter chords by playing them on your synth, one at a time.

● **Event Editor.** Shows the position in your song of each event and enables you to view them all as text. You can select which event type or types to view.

● **Arrange.** 100 slots to enable you to build your sequence list. You can select events from the Pattern list (as in the Main window) and arrange them using Insert, Over-write or Delete modes. Other options here: Ghost Track (duplicate a Track without actually creating a copy in memory); Transpose pitch or velocity; set Delay or Program Change.

● **Synth.** Set the names given to instruments in the other windows. It's much easier to read "Piano" instead of "016"!

● **Mixer.** Choose the effect to mix in and use sliders to alter the effect: Tempo, Instrument, Pitch Bend, Control Change (depending on what your synth can recognise), Staccato/Slur.

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EASE NOTE

EXPRESS

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Stars

BY: LEE UPCRAFT

RESOLUTION: LOW ONLY

FOLDER: STARS

FILES: INST_EXT.BAS, STARS.DOC

READ: STARS.DOC

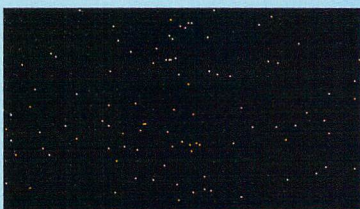
TO GET STARTED: SEE BELOW

Unless you live with your head in a bucket you must have noticed flashy starfield effects popping up in the background of space games and demos – neat stuff. The trouble with producing these in BASIC is speed – they're quite processor-intensive. However, one of the spiffy things about *STOS Basic* is its modular construction. Extra commands can be included by adding extensions to the language – and *STF* has brought you some stunners on past Cover Disks. *Stars* is a machine code extension to *STOS* that adds powerful specialist commands to give you fast starfield in only a line or two of BASIC.

Adding the extension to *STOS* is made a doddle by a special installation program. Load and run *INST_EXT.BAS* into *STOS*, then hit <1> to install the interpreter extension and <2> if you have the compiler as well. Each extension has its own identifying letter. *Stars* uses "H" by default, which shouldn't

cause any problems. You can change the drive too. That's it! Now when you load in *STOS* again you've got four new commands with oodles of parameters to play with.

There are two example listings to get you up and running. Take a look at the document file *STARS.DOC* for all the details. *Stars* can be plotted on-screen and moved in any direction at any interval, even zooming in and out of the screen. If you select a parallax starfield, then stars move in relation to their colour value. It all works about 20 times faster than the best you could do with standard *STOS Basic* – that's fast!



● It looks like 200 dots on a black screen, but is in fact a stunning 3D starfield. Try bouncing your head up and down in front of this page to simulate the effect. *Stars* is a *STOS* extension that adds whizzy *Star Trek* effects. (*Star Trek* is a trademark of Paramount Pictures. *Stars* aren't. So there.)

Turbo

BY: KEVIN CREASEY

RESOLUTION: ALL RESOLUTIONS

FOLDER: TURBO602

FILES: TURBO602.PRG,

TURBO602.DOC

READ: TURBO602.DOC

GET STARTED WITH:

TURBO602.PRG

Everybody needs a RAMdisk, probably the most universally useful utility you can have. If you've got a printer you'll find a printer buffer pretty damn handy too. A RAMdisk is an area of memory set aside for your ST to use as an extra disk drive – this makes copying and loading things very fast indeed. A printer buffer is an area of memory that is used to store data being sent to the printer, freeing up your ST to do other things at the same time. Both obviously worth going for! *Turbo* is the two utilities combined and made reset-proof – if you have to reset your ST or (horror of horrors!) it crashes, all your data is safe.

To use *Turbo*, copy *TURBO602.PRG* into the *AUTO* folder of your boot disk and reset your ST to install it. The boot disk is the disk you put in your internal drive when you first switch on.

Any programs inside a folder called *AUTO* are automatically run when you reboot, provided they have the filename extension *PRG* and the *AUTO* folder is not inside any other folders.

The first time you run *Turbo* you're asked to configure it. Type in the drive letter of the RAMdisk and its size and the size of the printer buffer. Memory permitting, the maximums are 1,024 Bytes and 256 Bytes respectively. Save this configuration to disk and it's set up automatically next time you boot up. If you want to re-configure it, hold down the <Alternate> key while you are booting and to abort installation altogether hold down both <Shift> keys.

To access the RAMdisk you need to install a Desktop icon for it and do a "Save Desktop" to have it ready and waiting for you. The ST's manual tells you how to do this and the document *TURBO602.DOC* on the Disk has all the details on *Turbo*. With this one little program you can speed up printing and disk operations by loads. An instant upgrade – smart!

Warning: *Turbo* is "reset-proof" but all data in a RAMdisk gets deleted when you switch off your ST, so if you want to keep anything save it to a real disk or hard drive first!

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SHUTTLE

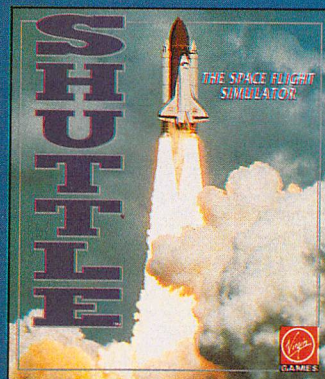
BASED ON OFFICIAL GOVERNMENT DOCUMENTS. SHUTTLE IS THE MOST ACCURATE AND COMPREHENSIVE SIMULATION OF NASA'S SPACE SHUTTLE EVER PRODUCED FOR ANY HOME COMPUTER.

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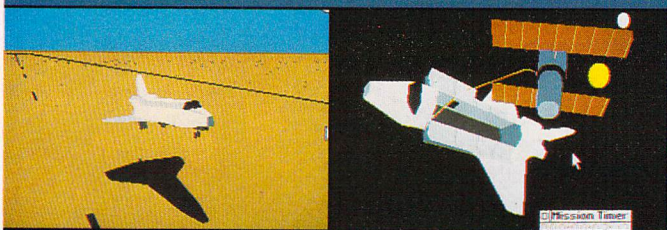
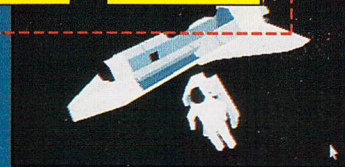
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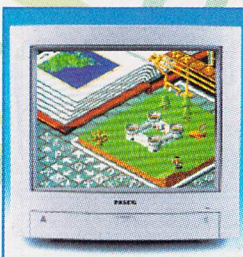
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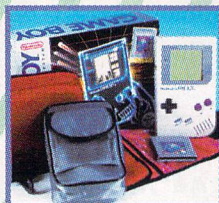
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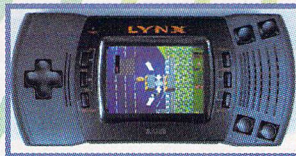
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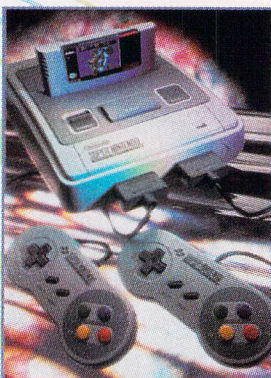
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HCS STE memory upgrade kits come complete with full instructions designed for the novice. The complete job should take no longer than 15 minutes. 2 and 4 megabyte kits come with free utilities disk and multitasking software.

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STF (M) and Mega ST upgrade kits

Xtraram Deluxe plug in upgrading system fits inside the computer. It can upgrade your computer in stages to 1Mb, 2.5Mb* and 4Mb. The kit comes with comprehensive instructions designed for novices. The kit uses SIMMS, so is easily upgradeable.

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To 4 Megabytes.....	£140.00

Solder in Kit

The solder in kit will upgrade the 520ST to 1Mb. Electronics experience is required as much soldering is needed. Check your RAM chip configuration before ordering: 4 or 16 chips, SMD or DIL.

Solder in kit (all versions)	£25.00
------------------------------------	--------

REPLACEMENTS

The HCS power supply and disk drive upgrades come complete with fitting instructions and plug straight into the ST without soldering. The Power supply produces less heat than the original so is more reliable.

Replacement power supply	£39.95
Double sided disk drive kit	£47.00

ACCELERATORS

The AD speed made by ICD fits in place of your microprocessor. It uses a 68000 chip running at a switch able 16Mhz with cache or standard 8Mhz to give virtually 100% compatibility. The 68030 SST for the Mega ST gives phenomenal speed with a 68030 running at 50Mhz! The SST has space for 8Mb on board RAM, TOS2 included.

AD Speed ST	£145.00
AD Speed STE.....	£165.00
68030 SST - 50	£550.00
Fitting for above	£35.00

INTERFACES

The "AdSCSI" ICD host adapter gives SCSI output from the STs DMA port, complete with full documentation, DMA cable and hard drive formatting software. Multirez allows the ST to display all 3 ST resolutions on the multisync monitor. The forget me clock sets your STs time and date, with cartridge-through port. Keyboard interface allows the use of external PC compatible keyboards on the ST.

AD SCSI.....	£69.99
AD SCSI Plus (with clock)	£79.99
Keyboard Interface	£55.00
Multirez	£44.99
Forget Me Clock.....	£16.99

MONITORS

14" super high resolution 0.28 dot pitch Multisync monitor is compatible with the TT, PC VGA/SVGA and Multirez. SM144 is compatible with all monochrome ST software, all normal controls at the front. Both have picture size and position adjustment.

Multisync colour monitor	£280.00
SM144 14" FST Monochrome	£115.00

MODEM 9600

HCS modem 9600 has FAX capability with super fast 2400 baud MNP 5 error correction and compression, give 9600 baud data through put, with PC software. Modem compatible with all formats.

Modem 9600 MNP level 2, 3, 4, 5	£139.99
---------------------------------------	---------

PC EMULATORS

PC emulators fit onto the microprocessor in the ST. The computer can then be switched between PC and ST mode. For fitting on the STE or Mega please contact technician by phone.

AT Speed C16	£205.00
AT Speed 8	£135.00
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Fitting for above.....	£30.00

The Vortex 386 emulator runs at 16Mhz and allows true multitasking in PC mode on the ST. Space on board is provided for a 387 CO Processor and 512K of FASTRAM. Norton factor 15!

VORTEX 386 SX-16.....	£330.00
387 CO-PROCESSOR	£117.00
FASTRAM CACHE	£30.00

SPECTRE GCR MAC EMULATOR

The Spectre GCR cartridge allows the ST to emulate the Mac giving 20% more speed than the Mac plus with 30% bigger screen area! It is fully compatible with ST hard drives. When used in conjunction with the SST it can beat the fastest macs. The megatalk board fits the Mega ST to allow connection to Mac specific peripherals, LAN network and Mac SCSI.

SPECTRE GCR (Inc. 128K Roms).....	£300.00
Megatalk Board.....	£250.00

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STOS

WATCH OUT!
STOS doesn't run with TOS versions above 2, so if you've upgraded to v2.06 or have a Mega STE or a TT, you can't use the program

Are we good to you or what? Two brilliant pieces of software grace the second Cover Disk! *STOS* is the complete game-creation package – an easy-to-use BASIC programming package with 320 powerful commands. *Animaster* is a comprehensive sprite designer and animator, enabling you to create professional-quality sprites and use them in your own *GFA Basic* programs. Chris Lloyd steps shyly up to the podium and does the honours



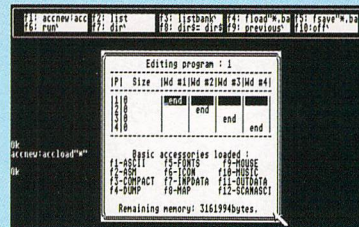
READ THIS BIT FIRST

Get that wonderful second Cover Disk in the drive and open up the STOS folder. You can run *STOS* straight from the Cover Disk by running *BASIC206.PRG* and loading in the example games. In order to fit the complete package on the Disk for you, however, we've had to compact all Accessories and example memory bank files into two self-extracting programs. If you want to get into programming and use all the extras, you need to make a backup of the Cover Disk and decompress all the extra goodies that you can find there.

First write-protect the Cover Disk – that is, move the little black tab so you can see through the hole. Nothing can now be written to or deleted from the Disk. Open the STOS folder and copy the file *STOS1.TOS* onto a new formatted disk. Now double-click on the program on this new disk to run it and it decompresses itself into a mass of files. Now delete *STOS1.TOS* from your new disk to leave room for the next batch of files, or else you could use another blank disk and copy *STOS2.TOS* to it. Now run *STOS2.TOS* and you get another mass of files. You can then delete *STOS2.TOS* from your copy. This new disk now has all the extras that come with *STOS* including the sprite, music, font, icon and map designers. Now take another blank formatted disk and copy all the other files from the STOS folder on the Cover Disk – this is your language disk. Don't, whatever you do, delete anything from the original Cover Disk itself. You wouldn't do anything drastic like that, would you? No, thought not.

Since its release *STOS Basic* has been a roaring success, putting serious programming within reach of us ordinary mortals. It's a language designed to produce games but can turn its hand to anything you fancy. There are over 320 powerful commands that give you an amazing amount of control over your ST with only a few lines of code – stuff which would require realms of wibble using any other language.

On the Cover Disk is the complete thing, nothing taken away. In order to squish it all on we've had to compact a few things, although the language itself and the example games are ready to roll. Open up the STOS folder and run *BASIC206.PRG*. Press <F4> to load in a BASIC listing. Click on either the ORBIT or ZOLTAR folder and select the



● Press the <Help> key to reach this memory screen. *STOS* can hold up to four full programs in memory at once – use the cursor up and down arrows to switch between them. This screen also gives you access to the Accessories from the list at the bottom using the Function keys.

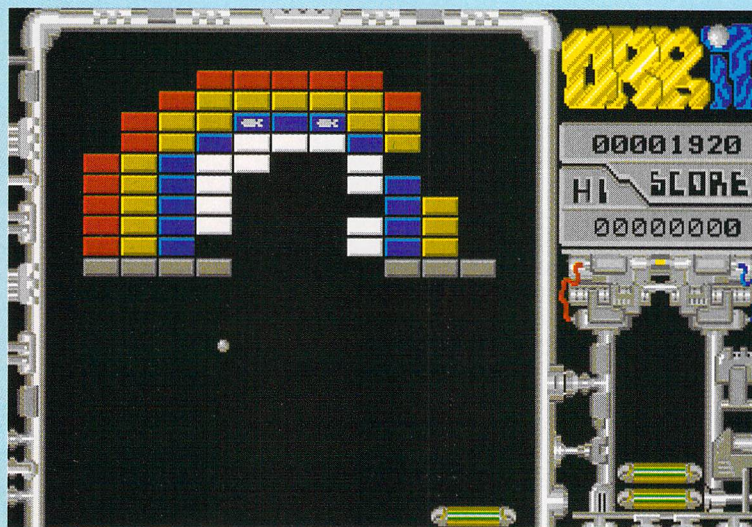
relevant BAS files, then click on Return or hit the <Return> key on the keyboard and in it loads. Type in *run* or press <F6> and you're in action. Impressed? You should be. Before you

go on, it's best to make a fully working back-up in case you spill coffee on the Disk, it falls on the floor and gets trodden on before it somehow it gets accidentally thrown out of the window and the cat runs off with it. It's easy with *Back-Up* – see page 7.

When you first load *STOS* you find yourself in the Editor window. It's here that you type in your programs or enter direct commands. Along the top of the screen is a bar with the function key shortcuts. Pressing <Shift> brings up another set of shortcuts. You can configure the Editor setup by loading and running *CONFIG.BAS*. As with most BASICs, you enter programs by typing in a line number first and then the commands – you can use any number you like but they get executed in strict order. Commands typed in without a line number first are called direct commands and are executed straight away.

STOS has several unique features, including these things called memory banks – sections of memory used to store data, which can be anything from pictures to music. You've got 15 at your disposal – the command *list-bank* gives you the lowdown on the contents. This means there's no mucking about loading in graphics before you can use them – they're already in memory and hot to trot.

There's so much to the *STOS* language that we can't possibly go through all the sexy(?) commands here. On page 43 we've got a rather special offer involving the full spiral bound 280-page manual – and the *STOS Maestro Plus* sampling cartridge! Then check out our tutorial series starting next month. We'll have you programming stunning games, swooping demos, rousing sampled symphonies and marvellous utilities before you know it, probably.



● *Orbit* – one of the two fabby example games that come with *STOS*. It's our old favourite the bat and ball job, and it comes with a few extras like tiles, as well as a myriad of special effects and a complete level editor. Good one.

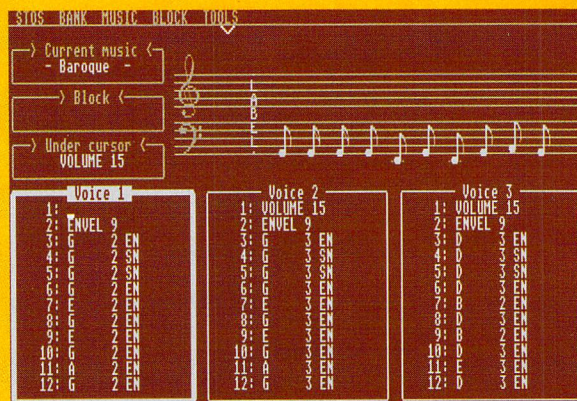
DON'T MISS THE SPECIAL STOS MANUAL OFFER ON PAGE 43

OPTIONAL ACCESSORIES

Another of the *STOS* specials is the Accessories, which work much like regular *ST Desk* Accessories, sitting in memory waiting to be used. *STOS* comes with 16 as standard and you can easily write your own. There are powerful designers for your sprites, music, fonts – even one that creates maps for you. They are loaded in using the `acclload "name here.ACB"` command, using the appropriate Accessory name. You can run them at any time by pressing <Help> and one of the Function keys. There are plenty of example data files to load in and experiment with. The `acclnew` command zaps all the Accessories from memory.



● Here you are with the powerful sprite editor in action. You can design and check the animation before saving the sprites straight into your program's memory bank.



● The music Accessory gives you control over your *ST*'s three sound channels. You can load in and listen to sample tunes. Each memory bank of music can hold 31 pieces of music.

MY FIRST PROGRAM

Like learning any language, learning *STOS* is not going to happen overnight. It is however a damn sight easier to learn than just about any other programming language, probably. Once you've got your working backup ready, load up *STOS*, insert the disk with your MBK files on it, and try out this little listing we just happen to have prepared earlier.

```
10 mode 0 : key off : curs off : hide
20 load " sprdemo.mbk",1: Y=2
25 load "music.mbk",3
30 palette $0,$777,$7,$6,$5,$4,$3,$2,$1,
40 for X= 180 to 0 step -10 : ink Y
50 circle 160,100,X
60 Y=Y+1 : if Y>8 then Y=2
```

```
70 next X
75 music 1: music on
80 sprite 1,0,0,3
90 move x 1,"(3,2,125)(3,-2,125)L"
100 move y 1,"(3,2,85)(3,-2,85)L"
110 move on : wait key:end
```

Not completely mindblowing, but damn good considering the amount of code. *STOS* has automatically created the correct interrupt to move the sprite and play the music without you having to dip into the nightmare of Operating System calls or vector trapping. Try doing this in any other language and it would take masses of impenetrable code. What a powerful language it is – the game creator indeed! Now get creating.

VARIABLES

Programs use variables to store data – for example, you could use the line `X=12` to store the value 12 in the variable X. Later on you could do the sum `X+X=Y`. You would end up with the value 24 stored in the variable Y. You can call variables anything you like, as long as it's not an existing command word. By default *STOS* uses whole numbers. To use real numbers – that is, (with decimal points) – add the symbol # to the end of the variable name, as in `B#=2.569`. Strings of characters are suffixed with a \$, like this: `Y$="Zaphod Beeblebrox"`.

Animaster

One thing that can lift a good program into the realms of excellence is a well-animated sprite – that chap in *Prince of Persia* running and leaping about, or the marvellous death scenes from *Immortal*, for instance. *Animaster* is a powerful tool for helping you create the little beasties ready to be whacked straight into your *GFA Basic* programs and animated. You can create sprites up to 128 pixels square and as many of them as memory permits. *Animaster* can automatically create the mask files that *GFA Basic* needs to display them correctly over the top of a background. A mass of clever tools make the whole process as easy as it's likely to get. Animations are created as a series of frames, which can be edited, copied, deleted, flipped, scrolled and a host of other flashy things. There's even a comprehensive test bed for checking out your animations before you start coding them into your masterpieces. And of course we don't need to remind you that *GFA Basic 3.5* – the latest, fastest version of *GFA Basic* there is – was yours complete with *STF 35*. If you missed that, turn to page 40.



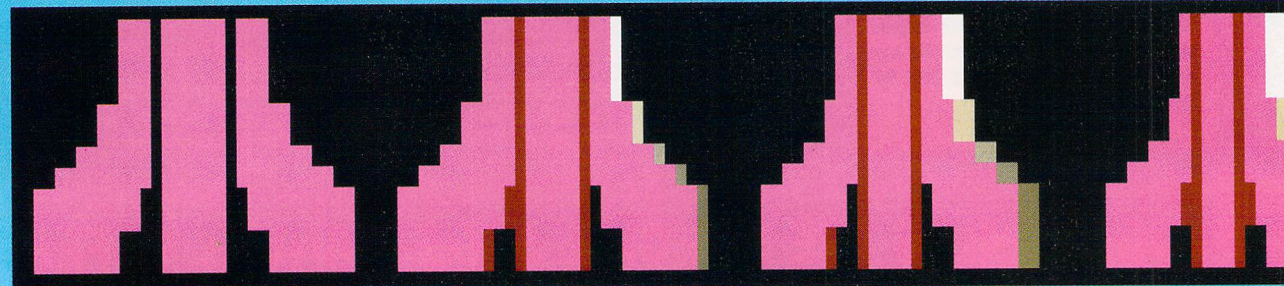
● To get a real feel of how things are going to look in your programs, *Animaster* enables you to animate your sprites over a background and check out how they look.

READ ME FIRST

You can run *Animaster* straight from the Cover Disk if you wish, but because we want to squash as much as possible on the Cover Disks we've compacted all but one of the example files. Open the *ANIMASTR* folder and copy all the contents to a blank formatted disk. Run the program *EXAMPLES.TOS*. The disk

whirrs away for a minute and you then find a host of examples and full source code for using *Animaster* sprites in your own *GFA Basic* programs. If you haven't got *GFA Basic* then you missed *STF 35*, where we gave away the complete and working package – turn to page 40 quick.

● The main event – animating a series of sprites. On the Cover Disk you can find this animation of a spinning Atari logo. Click on Load and select *SPIN.ASB*. Then just click on Animate and select Loop and then Play. Bingo! Instant animation.



BASIC BASIC

Can't let you go without letting you in on a few commands, really. Here's a taster of some of the simpler ones available. Novices can find more in the *STOS* manual – see page 43

Direct Commands

These are executed immediately from the *STOS* front-end.

Delete – Deletes lines between two values – for example delete 10-200 would kill those lines of code and all between them.

Erase (bank number) – Zaps one of the memory banks

Fload – Loads in a BASIC program. Type it in, followed by the filename in quotes – for example fload "orbit.bas"

Fsave – Like load but saves – easy, eh?

Lemonsole – An entirely fictitious command which we've invented to liven up this column a bit.

List – Bit of a surprise, this – lists the BASIC program currently in memory. Press the Spacebar to pause the listing and <Esc> to stop it altogether.

Load "file name", (bank number) – Loads a picture into one of the memory banks

Merge – Loading a program into memory clears the editor first, but merge enables you to merge two programs together. Lines with the same number get overwritten.

Mode (number) – Changes screen resolution. The number refers to the resolution: 0 is low, 1 medium and 3 high. Obviously you need a high resolution monitor to use 3.

New – Erases the program currently in memory.

Reserve as datascreen x – Prepares memory bank x as a screen bank, ready to load in a picture.

Run – Another surprise – runs the BASIC program currently in memory.

System – Exits from *STOS* altogether. Make sure that you've saved before entering this!

BASIC Commands

A select few of the johnnies that make up your BASIC program.

+, -, /, * and = – Your basic maths jobs for your basic maths jobs – for example $X=24+124-65/100*26$ stores the result of a ridiculous equation in the variable X. The asterisk is the multiplication symbol because there isn't a proper $\times$ and it's too easy to confuse with the letter x anyway.

End – Returns you to the editor.

For X=(start number) to (end number). .commands
.. next X – Repeats the commands between the for and the next a set number of times, depending on the start and end numbers.

Gosub (line number) – Send your program off to a section of code called a subroutine.

Goto (line number) – Jumps command of the program to another line.

If (conditions) Then (commands) – The commands are only carried out if the conditions are met.

Input (variable) – Your ST displays a questionmark and waits for input which is stored in variable.

Print (variable) – Prints the contents of the variable to screen.

Print "text here" – Prints text to screen.

Return – Pop this at the end of your subroutine and the program whizzes back to the gosub that called it, so the same code can be used in any number of places.

Sin, Cos and Tan – All work as you might expect. All angles are measured in radians. For example $X\#=\cos(12)$ stores the cosine of 12 radians in the variable X#.

EXTEND YOURSELF

STOS has a wonderful modular structure, meaning that extra commands can be added using extensions to the language. One comes as standard – the picture compactor extension, which can compress graphics to a fraction of their original size, saving space and enabling you to get more pictures on a disk. It doesn't stop there. On *STF* Cover Disk 32 came the STE Extension, enabling you to use the extra capabilities of your STE in your *STOS* programs. Cover Disk 33 had the Blitter Extension, giving you full control over that little speeder-upper chip devil. Cover Disk 34 brought you the MIDI Extension, for accessing your ST MIDI ports using *STOS*. (If you missed any of these and can't live without them, turn to page 40.) On the Cover Disk of this very issue is a number which makes producing fast parallax starfields a piece of cake. There are more *STOS* extensions on the way too!

OTHER HANDY BITS

● Pressing <Undo> twice resets the editor to its default values – useful when things have got messy after running a program.

● Pressing <Control>-<C> together stops a program from running and returns control to the editor.

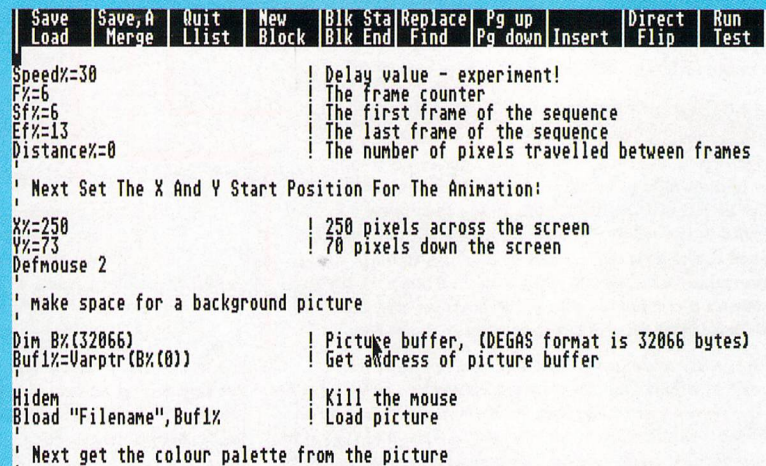
● A colon (:) can be used to separate multiple commands on the same line.

● To move about the editor you can use the cursor keys or click with the mouse. <Backspace> and <Delete> work as you would expect. Pressing <Shift> and <Delete> zaps a whole line.

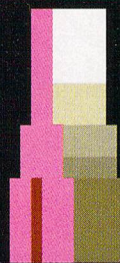
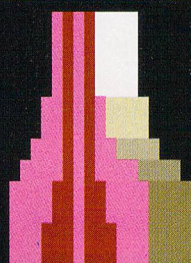
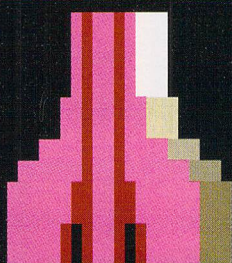
● Pressing <Insert> toggles the writing mode between Insert and Delete.



● In one corner of this issue's second Disk is the demo proggy BOUNCE.PRG, showing what's possible with Animaster, GFA Basic and a snippette of code or two.



● There are copious example listings included on the Disk to get you going in GFA Basic programs using the sprites you've lovingly created with Animaster.



THE STUDIO FLOOR

Animaster's main screen – from here all the juicy functions are within mouse reach

Sprite window – the sprite you're working on in real size. Move the mouse over it and a box appears. This is the magnified section that appears in the edit window. You can draw freehand by holding down the left mouse button. Clicking with the right mouse button "locks" the position of the edit screen, and clicking again releases it. You can alter the sprite size using the cursor keys – remember that this affects all the loaded sprites.

Load picture – click on this number to load in a picture to use as a backdrop for your animations or to cut sprite frames out of. Animaster can load PI1, PC1, NEO, IFF, ART format pictures and screens created using GFA Basic's Get command. After you select what you want the screen for, a box pops up to select the file type, and then you get the file selector to load in your graphic. There's an example called SHIP.PI1 on the Disk. The last option is to use either the picture's palette or the existing one – remember that black and white never change. If you're cutting out frames a little box appears over the picture, and you can resize this using the cursor keys. Just click over the section you want. If you select Auto after grabbing a frame Animaster cuts out frames across and down in a grid fashion.

Frame control – shows the current frame number of the sprite being edited. Click on the arrows to move through the sprites. The right mouse button moves in steps of five. If you go past the last frame you're asked if you want to create a new empty frame. To enter the frame number directly, click on the current number and type him in.



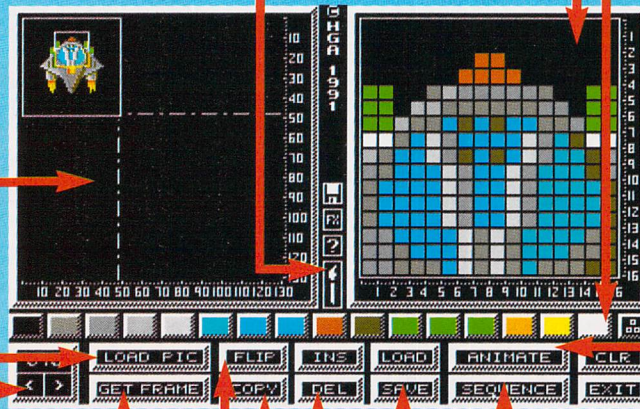
Flip – from here you can flip the frames vertically or horizontally or scroll the sprite within the frame. The little button with a cross in it centres the sprite in the frame. To move a sprite around, you need areas of black around it. Click on Undo to get everything as it was if you've made a blunder. If your ST has a blitter chip fitted you can turn the little blighter on and off from here as well.

Copy – click and up pops a boxette enabling you to copy any frame to any frame. You set the source frame – the frame you're copying from – and the destination frame – the frame you're copying to – by clicking on the numbers. The left button increases the value; the right one decreases it. Selecting Over completely replaces

Edit window – a 16-pixel square enlargement of part of your sprite. The left mouse button edits the sprite, and the sprite in the sprite window is updated as you draw. The right mouse button grabs a colour – just click on the colour you want to draw with and it's automatically selected.



Paintbox – click here to bring up the painting tools. As well as the basic pen which draws one pixel at a time there are lines, filled and unfilled boxes and circles, fill, airbrush and copy. Hold down the mouse button and drag to define the areas. If you make a horrible mistake click on Undo or Clr to zap the entire edit window. Select Exit when you're done.



Get frame – once you've loaded in a picture, click on here to grab more frames from it.

Load and Save – click on these to load or save the sprite files. These are saved with filenames ending in .ASB. There are a few on the Disk for you to take a look at. If there is enough memory you're asked if you want to save the sprite mask files as well. You need these to use the sprites in your own GFA Basic programs. If there isn't enough memory you can use the separate program CONVERT.PRGM on the Disk to produce them for you when you want to use the sprites in a program.

Insert – inserts a frame at the current position. All frames after this are moved one forward.
Delete – you can delete the current frame or or all of them. If you zap one all the subsequent frames move back to fill the gap.

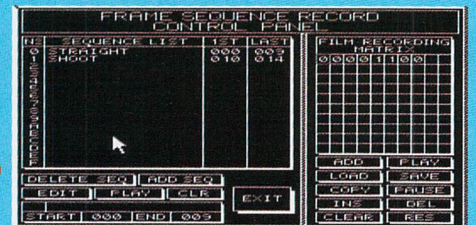
the destination frame with the source one; Merge puts the new frame on top of the old one. Copy can also use a buffer to temporarily store a frame – useful for copying frames between files because the buffer is safe from deletion. When the frame number is at zero, click once with the right button to select the buffer.



Colour palette – just click on one of the 16 colours to draw with it. To change a colour, select the box with the three dots at the right and up pops a box with colour sliders. Each colour is made up from red, green and blue. Click on the sliders or the arrows to either side to change the values. For ordinary STs the numbers range from 0 to 7, giving a palette of 512 colours. STes use numbers from 0 to 15, giving a grand total of 4,096 available colours.



Animation – now it's starting to get interesting. This enables you to animate your frames. If you select Background the animation gets displayed over your loaded backdrop. Select Loop and the sequence is played over and over – click with the right mouse button to exit. Reverse displays the frames in reverse order. You set the start and end frames with the mouse: the left button increases the number, the right one decreases it. The animation delay is the time each frame is on screen for. Once it's all set up, click on Play and off you go. As usual the right button exits.

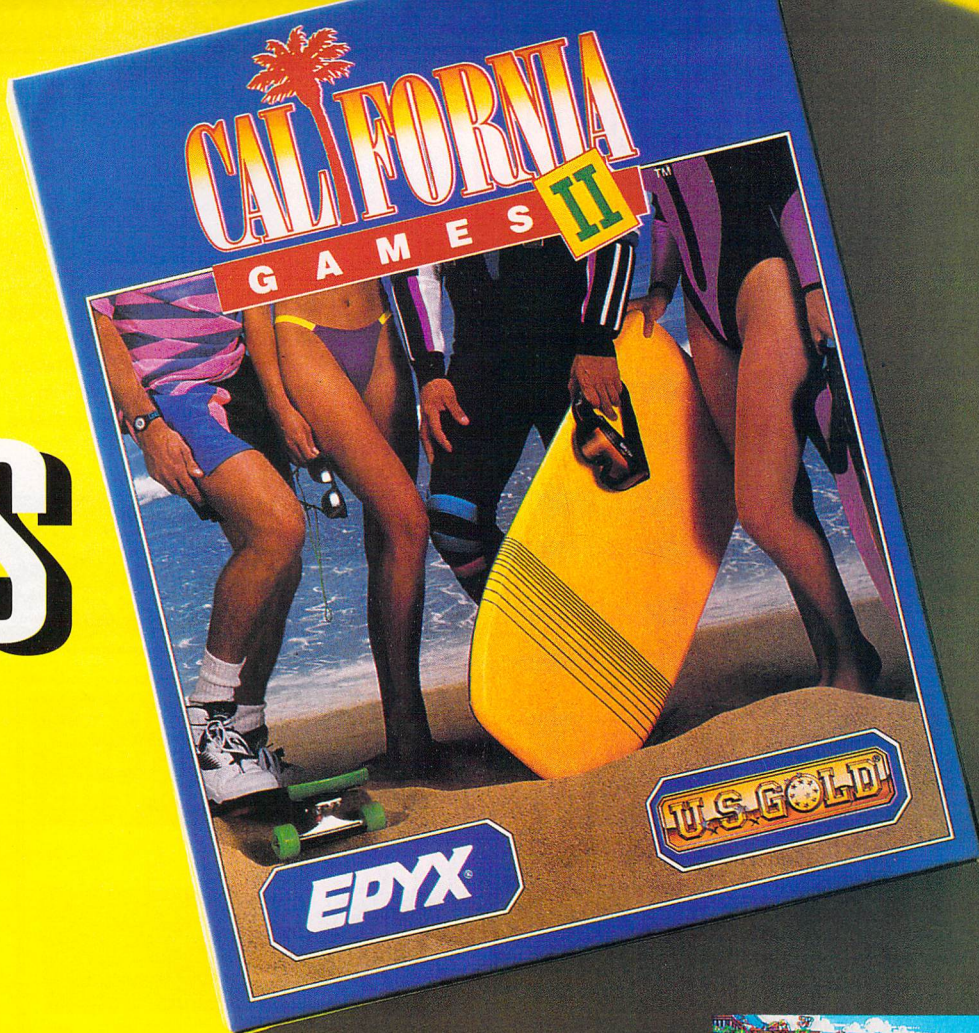


Sequence – the best bit, this – it takes the hard work out of testing animation sequences. You can define a series of animation sequences, each with its own start and end frames. Click on Load and whack in the example file called SHIP.SEQ on the Disk to go with the SHIP.ASB sprites. You've got two sequences in the sequencer list box, with different start and end frames. The buttons below this enable you to add, delete, edit and clear the sequences. To play a sequence click on Play and select one from the list. To add one click on Add Seq, use the keyboard to enter a suitable name and tap in the start and end frames.

On the left is the film recording matrix. This stores a series of sequences. Click on Play to see the example series. To add a sequence select a box and click on Add, then choose a sequence from the sequence list. Delete zaps the current box and Insert adds a pause, the other sequences shuffling around to suit. To copy a sequence select the source, click on Copy and then click on the destination square. Follow the same procedure but click on Swap and the contents of the two positions are swapped. Clear zaps your film from memory. Load and Save do just what they say with your sequence files – these are saved with the filename extension SEQ.

GET EVEN MORE FROM ANIMASTER – TURN TO PAGE 43 NOW!

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Screen shots from Amiga version

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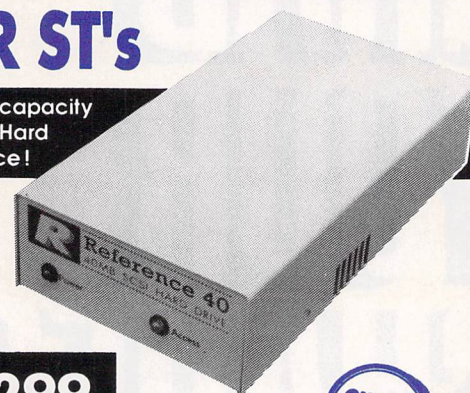
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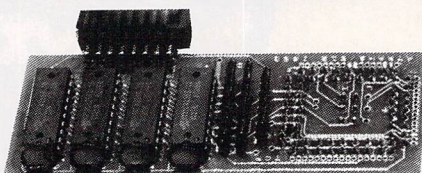


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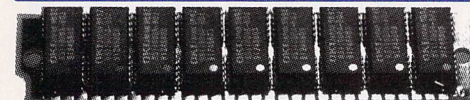
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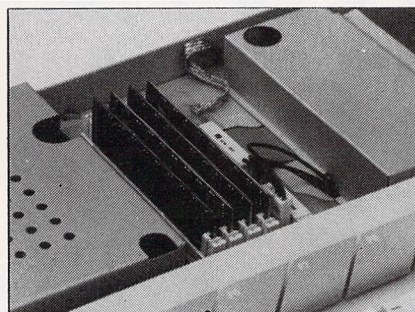
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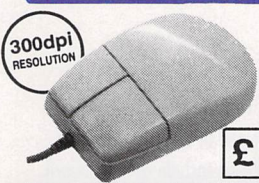


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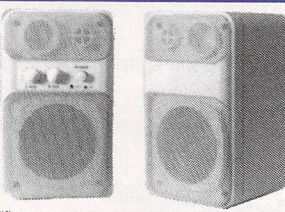


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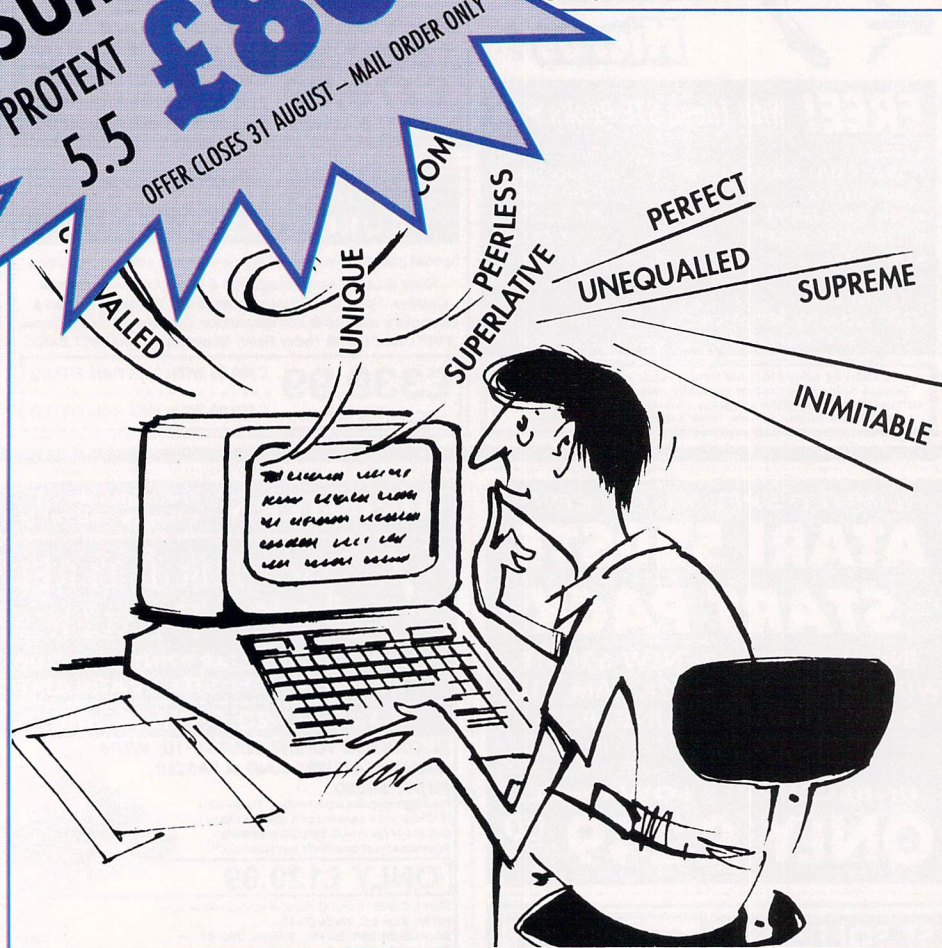
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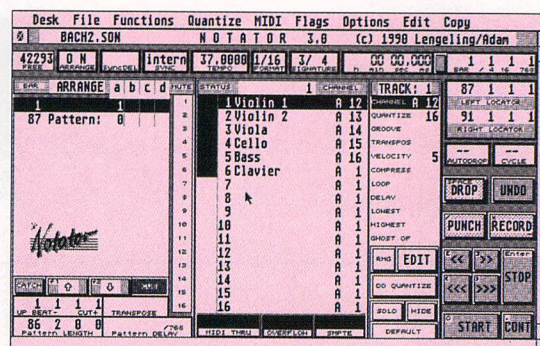
by Andy Hutchinson

Notator, the popular MIDI sequencing software which became an industry standard, is to receive a major update. The new *Notator* Logic will be available for the ST in the autumn.

This news conclusively gives the lie to industry rumours that C-Lab, the de-

velopers of *Notator*, were thinking of abandoning the ST, and it means that *Notator* on the ST is likely to continue as the benchmark in its field.

The main improvement in this latest version is the "Object-oriented music environment." This new system means that all the musical building blocks (sequences, bars, notes) and all the components of the MIDI system are represented by objects on the screen. These elements can then be linked together on the screen using "virtual



● The benchmark music package *Notator* is to be updated so you can create something called an "object-oriented music environment."

patchlead." In other words, you could connect a musical track with a MIDI device by dragging a graphical lead from track graphic to device graphic.

The sequencing structure has been designed to be three dimensional and open-ended, meaning you can have as

many tracks as you want. Multiple windows can simultaneously display different forms of graphic editing, while still enabling you to arrange music by using pattern-style sequence folders. *Notator* Logic is likely to cost £575.00. Contact Sound Technology on ☎ 0462 480000.

Official: ST FORMAT game campaign succeeds

by Ed Ricketts

MicroProse have announced that they will be converting their hugely popular PC game *Civilisation* to the ST after all. And their change of mind is mainly thanks to the letters they received from *STF* readers.

In *STF* 34 we ran a feature explaining that major software houses are no longer converting their big titles to the ST, and urged anyone interested in seeing great games on the ST to write to the companies and persuade them to convert their games.

MicroProse were just one of the companies deluged by readers' letters – they got over 300 of them. The sheer volume of letters, together with the fact that sales of *Formula One Grand Prix* on the ST were much higher than expected, convinced MicroProse

that sufficient numbers of ST game-players were willing to buy quality games.

Yvette Weir, PR Executive for the company, explained: "I would go into the developers' office each morning with piles of letters from *FORMAT* readers, dump them on the desk, and they'd say 'No, no, it can't be done.' Eventually they decided it could."

Civilisation should be available, for 1Mbyte STs only, sometime around September. But other software houses aren't convinced. Simon Jeffrey, PR manager for Electronic Arts, told *ST FORMAT*: "I was surprised by the small number of responses we had. The ones we did get were very vocal – Richard Arundale's letter in *STF* 36 is a typical example – but a lot of the writers had no real understanding of the logistics of business. We still have no plans to convert either *BOB* or *John Madden American Football* to the ST."

US Gold's PR manager, Danielle Woodyatt, explained their position. "We would love to do *Secret of*

Monkey Island 2 and *Eye of the Beholder* on the ST but it's out of our hands, since both games originate from American companies. However, we have received over 2,000 letters from *ST FORMAT* readers, which we're sending off to Lucasfilm and SSI in the States, who will then make the final decision. It was these letters that convinced us to convert *Legend of Valla* [a forthcoming revolutionary 3D RPG] to the ST."

There are already strong indications that *Eye of the Beholder 3* will appear on the ST – watch for more news in future issues.



● Well, okay, so it may not be the most visually stunning ST game ever created, but that's because it originated on the PC. Still, *Civilisation* is coming to the ST after all – thanks to *STF*'s readers!

YVETTE WEIR, MICROPROSE

**NEVER MISS AN
ISSUE OF
ST FORMAT AGAIN
– SEE PAGE 40**

**ATARI'S BEST-KEPT SECRET –
IT'S FANTASTIC NEWS AND WE
REVEAL ALL! TURN THE PAGE!**

BITS...

● If you need a high-speed network to link your STs and TTs then you need Data-Net from Ladbroke Computing International.

Data-Net operates at speeds of 10Mbit per second and enables several machines to share devices like laser printers and fax modems. The Data-Net software is the *Universal Network* package from Applications & Design Software (a US company), which is compatible with a range of network types. The hardware used is the Data-Net cartridge developed by Ladbroke.

The cartridge is about 2 inches square and an inch thick, uses coaxial cable with standard BNC connectors and is also compatible with Lantech LAN hardware. It can be used on all STs including the Mega STE; the TT can use the same software but uses the LAN port instead of the cartridge.

The basic starter kit, consisting of two network nodes and the software, costs £399.99. Extra nodes are £199.99 each. Ladbroke can be contacted on ☎ 0772 203166.

● K & M Publishing have released *Creative Basic*, a book packed with easy to follow programming examples for creating procedures, sub-routines and functions, as well as general programming tips. Examples are clearly laid out and can be easily converted to any version of BASIC on the ST. Other routines cover string manipulation, numeric functions, indexing and full screen editing. The author has written over 60 commercial programs, most of which have been business packages. The book is a bargain at only £5.00. Contact K & M on ☎ 0490 2328.

● Music Pro Import have a new version of MIDI sequencing program *Feeling Partner* available for the ST, version 1.6. Owners of v1.52 can get an upgrade to v1.6 by contacting MPI. The program boasts several new and improved features: the Realtime Arranger has two new chord recognition modes, MIDI keyboard split for the leading track and a new melody analysis system.

The Orchestration system has been improved with new algorithms and icons; drum styles and breaks can be created, there is a new models and pattern styles library and a library printout can be made for each instrument and style.

The sequencer itself has been improved with a slew of additional functions, including MIDI event filtering, solo function, new song creation, realtime track creation, stop pattern and realtime MIDI desk automation.

Feeling Partner 1.6 will set you back £149.00. For more info, contact MPI ☎ 081 780 9541.

New ST a world-beater

EXCLUSIVE

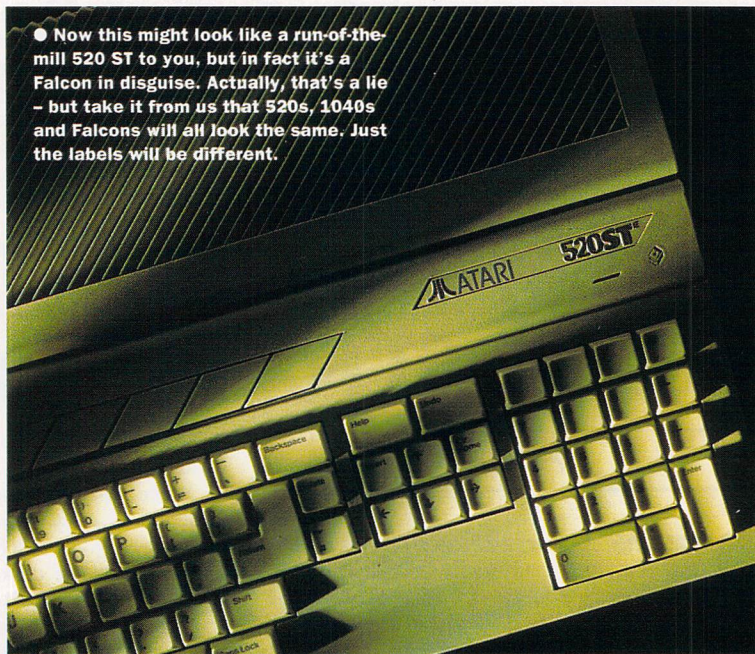
by Andy Hutchinson in California
and Clive Parker in Germany

Atari's new machine, the Falcon, is to be a multimedia work-station supporting a plethora of CD, audio and video applications. Sources within Atari told *ST FORMAT* that it will be priced at a level that competes directly with Commodore's new Amiga 800 (expected to cost about £600) and the Apple LC range (up to around £1,600).

Falcon is to be more compatible with the ST than the Mega STE is

We can exclusively reveal that the 68030-based Falcon includes a Motorola DSP 56001 chip. This chip enables the new ST to utilise amazing CD and video hardware such as digitisers, sam-

● Now this might look like a run-of-the-mill 520 ST to you, but in fact it's a Falcon in disguise. Actually, that's a lie – but take it from us that 520s, 1040s and Falcons will all look the same. Just the labels will be different.



plers and CD-ROM packages. In fact Atari have already developed much of this hardware ready for the machine's world launch at the Dusseldorf Atari show on 21 August. Developers in this

country have been creating game and productivity software which takes advantage of the Falcon's incredible hardware. Jeff Minter, programmer of hit games such as *Llamatron*, has been

BUT WILL IT BE ANY COP...?

ST FORMAT contacted the makers and shakers in the Atari world, gave them the lowdown on the Falcon and persuaded them to give us their opinions on the new machine

Peter Molyneux, of hit game-creators Bullfrog:

"I'll be very, very interested in developing stuff for it. We'd love to get hold of one. You know, I've prayed for this kind of move for a long time. I've always thought that Atari needed to release something far more impressive than the rest of the pack and the Falcon sounds like just that. The only qualm I have is that the price of PCs is falling all the time.

"We've supported the ST even when people have stopped developing for it, but as always the core developers are the last to know. I just hope Atari market it correctly. Basically if the games look good on it then it'll do really well."

Danielle Woodyat, US Gold:

"Obviously US Gold and its affiliates would love to produce software for such a sophisticated machine. However we're going to wait and see what kind of price the machine is released at and which other software houses support it."

Richard Eddy, CodeMasters:

"It really does sound like a user's dream, but Atari have to be very clever to gain substantial support

for the machine. Saying 'It's big – it does everything – look at tech specs!' only raises the question 'Like what?' Until we as a publisher are convinced that the machine is heading in the right direction it's very difficult to say that we will be investing time and money in project development. But we'd love to."

Alison Fennah, MicroProse:

"As one of Atari's key developers we will undoubtedly be supporting the machine, especially seeing as it's compatible with the existing ST range."

Karl Brandt, System Solutions:

"I can't wait to get hold of it. The true colour capabilities enable astounding graphics to be created

FALCON: A DIGITAL DREAM?

The Falcon is based on the 68030 CPU, the Rolls-Royce of CPUs. It is a full 32-bit processor and is used in top-of-the-range machines by many manufacturers, including Atari on their TT. The Falcon goes one better – apart from the 68030 CPU, the other main processing chip used in the Falcon is the Motorola DSP56001. This is an HCMOS, low power, 24-bit General Purpose Digital Signal Processor. This chip is designed to run in parallel with the main processor and can process instructions internally at speeds of up to 13.5 MIPS (million instructions per second) at a clock speed of 27MHz. (The standard ST runs at one quarter of a MIP!)

The chip has an internal command set like that of the main 68030 processor, making it easy to program directly. The internal address paths are 24-bits wide, enabling high speed bulk data processing. The chip is a CMOS device and has very low power consumption.

The processor is designed around three internal units which operate in parallel – the data ALU, the

address generation unit and the program controller. The data ALU performs all of the arithmetic and logical functions on data in the processor, the address generation unit performs all the address storage and calculations that are required to access data in memory, and the program control unit performs all the instruction decoding, hardware control and exception processing.

Because the DSP56001 can process data at such high speeds it is ideally suited for functions such as communications, numeric processing, high-speed control, audio and computer applications. The chip will be used in the Atari Falcon to process data at high speed for the enhanced graphics and audio functions.

The DSP56000 family of processors is used in Sun SPARC work-stations for graphics processing. The basic Sun SPARCstation ELC is an 8MByte monochrome system without hard drive and costs £2,995.00. The Falcon is reputedly heading for a £550.00 price tag. Truly power without the price!

creating games – some of which will include support for the analog joystick ports – for the machine, as have software house Psygnosis. According to the game's UK distributors, Daze Marketing, Atari are so impressed with the graphics in Silmarils' new role-player *Ishar* (reviewed on page 78) that it is "very likely" to be converted for the Falcon. In Germany, companies renowned for desktop publishing and sequencing software, such as C-Lab and 3K Computerbild, are busy preparing their top-flight programs to run on Falcon.

However, perhaps the most important piece of information about Falcon is that it is to be more compatible with the ST than either the Mega STE or the TT. This means that while suitably advanced software and hardware are being developed for the machine, Falcon users can take advantage of the thousands of programs already available on the ST.

Companies which have previously opted for Apple or Commodore

machines will now have a third, far superior, option in Falcon. Video titling, genlocking and digitising packages are already available, designed to use the Falcon's 30 screen modes, 16 million colours and the DSP 56001 chip. What's more, because Falcon's RAM memory is expandable to a huge 16MBytes, there is plenty of memory space for large sound and video files.

Falcon comes in the standard 1040 STE casing and uses a high density 1.44MByte disk drive, so more than twice the data can be squeezed onto a 3.5 inch floppy disk. (ST owners will be able to buy an adapter board to run a 1.44MByte drive themselves.) Falcon's hard drive support is to be based on the faster and more widely used SCSI 2 format rather than the traditional Atari standard of ACSII.

As reported last month in *STF*, the machine will have a 10-channel 16-bit sound chip originally developed for the Atari consoles. Music fans should also be pleased to know that the usual MIDI

"As one of Atari's key developers we will undoubtedly be supporting the machine"

MICROPROSE

sockets are in place: MIDI In and Out are fully supported, and MIDI Through is also to be available via the Out port. Steinberg's *Cubase 3.0* runs on the machine faultlessly, but the company are likely to upgrade their program in order to support the digital signal processing capabilities of the new machine.

Graphic packages are also ready to be shown with the machine at the Dusseldorf Messe. These graphics, our source reveals, are as close to true colour as an ST monitor can display – roses will look like roses and flesh tones will look like flesh. The exciting new machine is due to be released in the UK by Christmas.

and processed. Software houses should upgrade all their software to be compatible with the new screen resolutions. It is a powerful machine and will be excellent value for money, offering the perfect system for DTP in full colour."

Neal O'nions, Compo Software:

"If what you tell me is true then it would represent a technological breakthrough for home computers and would put Atari streets ahead everyone else. This technology is what the home market needs and is quite astounding."

Nick Hill, HCS:

"If these specifications are correct then it would make the Falcon an extremely powerful DTP machine."

Mark Pearson, Protar:

"The Falcon could be a monster if

marketed correctly. It must be pushed by Atari as a serious machine. It must be seriously considered as a new machine, either as an upgrade to an ST or as a first buy. Atari must not promote it as a games platform – that would be the kiss of death for the machine.

"What's going to happen to the Mega STE and the 1040 STE? Prices of the basic Atari machines must drop drastically as a result. People must be made to realise that there is software available for the ST to run a small business as well as any PC software can."



● If you thought *Populous* was great on the ST, just imagine what the *Bullfrogs* could do for the Falcon!

'N'...

● Anyone who has a Proteus MIDI module, including the Protologic module, can now buy a low-price high-quality Editor and Librarian package from Essential Software. Called *Protege 123*, the program runs in high res on any ST and is provided with a full bank of 64 pre-configured sounds. *Protege 123* costs £22.50 from Essential Software, 6 Malvern Grove, Chellow Dene, Bradford BD9 6BU.

● Golden Image have upgraded their *Touch-Up* scanning software to version 1.8, now enabling you to scan in real-time. Other improvements include 256 greyscale TIFF file support as well as 6x6 and 8x8 dither patterns, and Moire patterns have been improved to give a clearer image. Scanned photographs can be saved either as a 16-level greyscale IFF file or as a TIFF G greyscale file (up to 256 levels), with or without compression. To upgrade you should send your original disk and £29.95 to Golden Image. Get full details from them on ☎ 081 365 1102.

● MicroProse, eh? They get everywhere. Not content with opening a new office in Manchester, they've also recently bought the development team Vektor Grafix. The Grafix lads have just finished *Shuttle* for Virgin (we've got it here – look, there it is, just above my desk, see – but there just wasn't time or space to review it this month. Next month, for certain) and they're now putting the finishing touches, as they say, to *B-17 Flying Fortress*, which looks really rather smart. It's a WW2 flying/fighting sim with some cracking 3D graphics and innovative views, such as the one that follows missiles as they plummet earthwards. This game *should* be here for review next ish, too, though don't count on it.

SOUP UPDATE

The *ST FORMAT* Soup Up service launched last issue has proved to be a massive success, with everything from mouse repairs to accelerator card installations being requested. The most common queries are about: **TOS 2.06:** this can be fitted to any ST and enables you to switch between your existing TOS and the new using software. Memory upgrades cause no problem.

Fitting: if you don't want a full service, we'll fit your options for only £9.99.

Reflex Card: this doesn't need a special monitor and works in colour as well as black and white. However, it doesn't fit in an ordinary ST, only in a Mega ST or an STE.

For details, ring ☎ 0480 891171.

Cheap new laser

by Clive Parker

The Ricoh LP1200 laser printer from Silica Systems is a new six page per minute Laserjet 3 compatible selling for £821.33. The printer can print at resolutions up to 400dpi and comes with 2MBytes of RAM as standard. This makes it an excellent buy since most new laser printers are supplied with 0.5MByte or 1MByte of memory and need extra RAM installed before they can process and print full pages of A4 graphics.

Another innovation is the use of internal "Flash ROM," enabling the printer's command language to be upgraded when an improved version is released, effectively making the printer "future proof." The Flash ROM is an area of the printer's ROM memory to which new controller information can be downloaded in the same fashion as an EPROM. Both the Flash ROM and removeable smart cards can also be used for storage of fonts, graphics and

macros. The printer can output at a range of resolutions from 200dpi up to 400dpi, although most software drivers available at the moment can only offer 300dpi output on Laserjet compatibles.

There are eight scaleable fonts built in which can print in all sizes up to 999.75-point, and there is also a built-in resolution enhancement feature which varies the size of the dots to give sharper output without jagged edges. Ricoh call this system FIAL (Fine Imaging ALgorithm) and have produced a new toner that can cope with the small dot sizes without clogging. The LP1200 outputs text pages at a rate of six per

minute, with the first page ready after 15 seconds – much quicker than similar printers. Ricoh have included a built-in page description language called Layout so you can create customised printing systems. There is a one-year on-site warranty with next day service.

All new software is now written with Laserjet 3 printer drivers included as standard, making the LP1200 instantly compatible with any new package on the market. To cope with software that doesn't support Laserjet output there are also Epson FX-850 and IBM ProPrinter modes built-in, so the printer is compatible with practically every software package ever released. Connection to your machine is via parallel, RS232 and RS422 interfaces. Contact Silica Systems on ☎ 081 309 1111 for further details.



● The Ricoh LP1200 laser printer – very speedy compared to similar printers and absolutely bursting with innovations.

PIECES

● The release of *Campaign* from Empire has been put back again, this time to September. Meanwhile the even more delayed 3D space epic *Eye of the Storm* isn't now expected until sometime in October. Shucks, it's only a year late.

● Just a quick warning now: the big game of the latter half of '92 is going to be *BattleToads* from Mindscape. It's programmed by Rare (crumbly ex-Spectrum owners will know them better as Ultimate Play The Game) and it's been a heeeeeuge hit on the consoles. It's an out-and-out arcade game – nothing sophisticated, but what an arcade game.

● Tacky tacky tacky! Those Codemasters have come up with a new way to spread the word of Dizzy: Collect-O-Cards. Just like the old cigarette cards, one card is included in every Codemasters game, featuring a picture of a Dizzy character and a description. Collect all 16! Swap with your friends! Horde them all now and make a fortune when they're incredibly valuable in 40 years' time! Or not.

PROFESSIONAL GRAPHICS SOFTWARE FOR ALL

The prices of Phase 4's top-of-the-range professional graphics packages have been slashed by up to half.

Prism Render, a professional-quality photorealistic rendering system, now costs £64.63. Used with other Phase 4 software, it enables you to create rendered images with 24-bit true colour detail which can be displayed on a 256-colour resolution system by using special colour mapping techniques. The program renders ani-

mations created with *Chronos 3D* (£176.25 including *Cyber Sculpt*), a 3D key frame animation package, and CAD-3D2 objects. *Render for Sculpt* is £41.13 and can give you a rendered preview of the object while you're still modelling it. *Chronos 3D* is an animation package which, using key frame animation, enables you to load CAD-3D and CGS (Phase 4 3-D objects) into a "virtual universe" where they can be manipulated to create ani-

mations. *Prism Paint 1.5* (£57.58) is a 2D paint and animation package which can be used to retouch animation frames. It can load several file types. *Rosetta* (£47.00) is a multi-format file conversion program which enables 3D objects to be converted for use with Phase 4 software.

Phase 4 software supports all ST, STE and TT screen resolutions as well as VDI compatible graphics cards. Contact CGS ComputerBild on ☎ 081 686 8212.

MUSIC NEWS

by Chris Ankin

PROMUSIC GUITAR CLASSICS

The range of available styles of music in MIDI file format seems to increase almost daily. ProMusic now offer a selection of new disks entitled "Guitar Classics." They include music by artists such as Led Zepelin, ZZ Top, AC/DC, Eric Clapton, Jimi Hendrix, Gary Moore and Van Halen – sadly, though, no sign of anything by Bert Weedon. Each disk contains a minimum of four tracks, and they were originally recorded using a MIDI guitar to try and preserve most of the nuances and feel of a real guitar. Songfiles cost £4.95 each. ProMusic ☎ 071 252 8573.

SAMPLE CD'S MARRY MULTIMEDIA

Alongside the blossoming market for MIDI music files, you must have noticed the

recent onslaught of sample CDs – compilation CDs of sound effects, drum loops and other samples to incorporate into your own music. One of the most successful ranges has been the Bob Clearmountain series of drum CDs, and now the producers East-West have launched a new title called "Dance & Industrial" (£49.95). The drum loops featured on the CD are also available on an ST disk in MIDI File Format (£10.00 from Time & Space ☎ 0442 870681), enabling you to recreate the loops featured on the CD by triggering your own samples or using those taken from the album.

MIDI CURE

If you haven't realised it yet there is one MIDI port which is strangely absent from the side of your ST – that mythical beast, MIDI Thru. For some unknown reason Atari decided to merge the Out with the Thru, thus creating a new non-standard MIDI output. Thru sockets normally echo the input

socket's data, but the ST's unconventional setup can in extreme cases cause notes to hang and make synchronisation signals from MIDI clocks go out of time.

Help is now at hand from a new lead which plugs directly into the MIDI Out socket, then splits into two, giving you a dedicated Out and Thru socket. Aptly named the MIDI Splitter, it costs £30.00 from Intonation, 32 West End Lane, West Hampstead, London, NW6 4PA.

MOZART RECEIVES OSCAR

No, Wolfgang Amadeus hasn't gone to Hollywood, but 200 years after his death his symphony No 40 in G minor has been converted into MIDI file format for specific use in C Lab's *Notator* scorewriting package. Oscar Music Productions are behind the new ST disk, which comes complete with a suitable set of orchestral sounds for the Yamaha SY77 workstation. If you don't own *Notator*, you'll be pleased to know that a Standard MIDI File version is on its way, along with more classic titles to enable you to load the music into other sequencers.

The *Notator* file disk costs £24.95. You can get in touch with Oscar Music Productions on ☎ 071 628 4606.

NEW BREED OF LIZARD

A new universal synth editor/librarian looks set to storm the ST music world. The *Lizard* is designed to be a completely open-ended program, which with the introduction of suitable drivers will enable your ST to edit and arrange the voices for virtually any synthesizer. Drivers currently available are for Yamaha, Roland, Ensoniq, Kawai, Emu and Waldorf. Each disk contains between four and six drivers, with the range certain to expand. The main *Lizard* program costs £165.00 and driver disks cost £35.00. Music Pro Import ☎ 081 789 8641.

NEW EDITOR FOR ROLAND SYNTHS

If you own a Roland D5, 10, 100 or 20, or even a GR50, then Syntec have just the program for you. It's a new editor/librarian with a host of features including click and drag sliders, graphic envelope and bias point displays and a randomise facility as well as on-line help, supplemented by a printed manual. The price is a very reasonable £39.95 for the D-Series program and £49.50 for the GR50 version. A demo disk is on offer for £3.50, refundable against the purchase of the full program. Syntec Systems ☎ 081 941 4425.

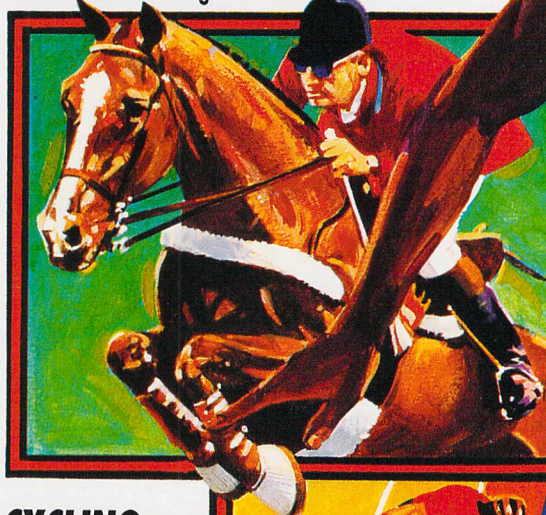
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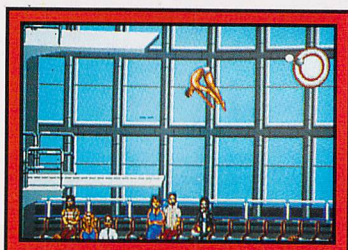
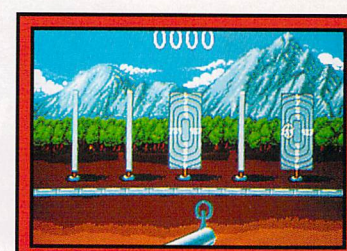
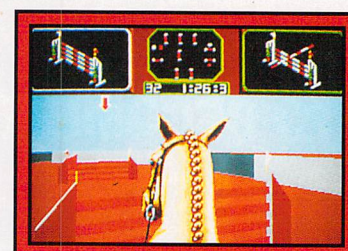
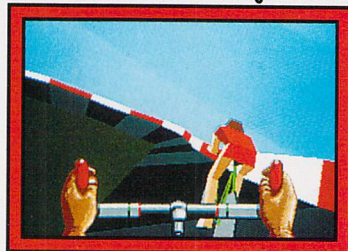


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SCREEN SHOTS TAKEN FROM
AMIGA VERSION



Super, smashing,

OH, I'M SORRY I DON'T SPEAK GIBBERISH



● **Mega Lo Mania** is, according to Jon Hare, a good example of how to present a good deal of information quite simply. The more time the programmer spends designing the control system, the less time the user has to spend fighting with it.



● **Wizkid** – a game that “sort of evolved.” When you have a few games under your belt, you can afford the luxury of changing a game design every five minutes, but software companies aren’t impressed by that sort of thing – unless it’s their changes you’re making, of course.

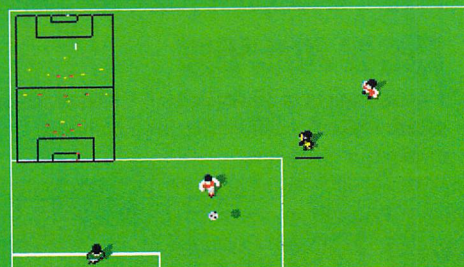
Although your choice of programming language must, of course, be restricted by your programming knowledge, that isn’t the only limiting factor. You should also take into account the style of your game.

Arcade games need fast screen updates, smooth and rapid sprites, and often require precise timing routines for controlling things such as palette changes and sound effects. That’s why the overwhelming majority of arcade games are written in machine code. There are two main things in its favour: it’s the only language that gives the programmer absolute processor-level control over the ST – and it’s fast. But for the same reasons as it’s fast and flexible, machine code is notoriously difficult to get to grips with. Everything, but everything, has to be done “by hand.” You can’t write something like CLS and expect the screen to clear – you need to write your own screen-clearing routine. It’s also very difficult to debug.

But perhaps its major disadvantage if you’re thinking of converting your game to another micro is its portability – or lack of it. Unless the micro to which you’re converting uses the 68000 processor as the ST does, you’re forced to virtually rewrite the entire game for the new chip. Fortunately, the majority of popular machines use the 68000 or a variation of it.

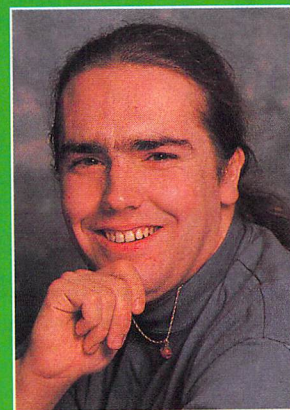
For anything other than arcade games, you could consider using a higher-level language like C or BASIC. They’re called “high level” because the programmer in effect works at a higher level – not needing to concentrate on how the ST works, but on how the game should work. C gives you almost the same low-level control as machine code but takes away much of the drudgery. There are only around 30 commands in the entire language set, yet those commands are extremely versatile. Any game written in C should be very easy to convert – C is a standard language and any version of it should, in theory, conform to that standard. However, C isn’t nearly as fast as machine code and it’s sometimes fiddly to compile. *Populous* was written in C.

BASIC suits slower games like strategy games and adventures. A game such as *Dreadnoughts* (see the review in issue 35 – if you don’t have a copy turn to page 40) could easily be written in BASIC – it doesn’t need fast graphics or precise timing. BASIC, and STOS particularly, makes complicated procedures such as drawing



● **Kick Off 2**, the game that inspired Sensible Software’s forthcoming *Sensible Soccer*. There’s no need for game ideas to be entirely original. If you think *Sim City* could be done better (and let’s face it, it certainly could), why don’t you write a newer, faster, better version?

graphics and moving sprites as easy as they get. About the only commercial example of game written in STOS is Titus’ *Prehistorik the Caveman*, a competent but uninspiring platform game. As for compatibility with other machines, forget it. Unless the target micro has the same version of BASIC, you may as well rewrite the entire thing. Jon Hare is all in favour of rewriting rather than porting. “We always use machine code. We don’t forsake the game design for the sake of portability.”



● The very much un-sensible Jon Hare of Sensible Software – they may well write great games, but they’re not all that hot at meeting deadlines – *Wizkid* was due to be completed a year ago and it’s only just managed to make it onto the shelves.

HOW TO BECOME RICH AND FAMOUS...

...in six easy steps. Although we can’t really guarantee instant wealth, you could do worse than keep these points in mind

1 BE COMMITTED

(You will be if you become a programmer.) You really do need to be serious about developing your game. “Real” games often take at least a year to complete, so it’s not something you can do on and off. That’s not to say you need to give up the day job – just be sure you’re not going to get bored with the idea halfway through. Half-hearted attempts

may just about make it to the Shareware or Public Domain libraries, but commercial software houses aren’t going to look twice at them.

2 PLAN THE GAME

Know exactly what’s going on. Storyboard it if necessary. Think through each level; plan the routes the aliens are to take; decide on backgrounds; decide on a language. If you’re the programmer, make rough drawings of the graphics – even if it’s not you who’s going to be drawing them. If you’re a graphic artist, know what the game’s all

about. Learn about the game as thoroughly as the programmer. If you don’t know how the game is going to work, no one else is going to have a clue.

3 FIND AN ARTIST/PROGRAMMER

Take a tip from the professionals: if you can’t do a specific job, find someone who can. If you’re a programmer but can’t draw, get someone to do the graphics. If you’re an artist with some brilliant designs but nothing to do with them, find an enterprising programmer who can use them. Software houses much prefer to see the elements of a game

ST FORMAT AUGUST 1992

MYTH ONE: EASY LIFE

The most established and popular misconception about game programmers is that they're all incredibly rich. This is partly thanks to the stories the press have published.

In the early '80s, home micros were new and exciting and no one really knew what the hell this "video" game business was all about. Thus it was common to read stories in the more sensational papers about the computer "whizzkids" – a common press term used to describe anyone who's ever touched a computer – who earned millions every year by writing one or two games.

It wasn't true then and it's even less true now. Certainly, when the Spectrum ruled the waves, a market in its infancy offered many opportunities for unscrupulous software companies to make a quick buck by offering little more than tat. One or two programmers – notably David Braben and Ian Bell, authors of the origi-

nal *Elite* – did get very rich. But, on the whole, programmers were like anyone else – they did well enough and that's all.

Nowadays, in a market saturated with software companies, sophisticated selling and plenty of savvy, you're even less likely to make a fortune. Just as in any other industry (except perhaps the music business), it takes real talent – whether in graphics, game design, sound effects or otherwise – to make it big.

Nevertheless, the potential is always there. Original ideas are like a needle in the haystack of platform games, shoot-'em-ups and film licences. While an original game idea doesn't always guarantee commercial success – *Cybercon 3*, for instance, was an excellent and original game, but it didn't sell as well as it should have done considering its quality – it's usually a bonus.

and more like the movie industry. At the moment we're working on *Epic 2*, and we've done 20 square feet of storyboarding. It's been in planning for five months, unlike the original *Epic*. As a new technique, we're prototyping each routine we write. For example, half the team have been working on a fractal mountain routine using Phong [sophisticated shading techniques that have the effect of making three

dimensional objects look more realistic] shading for around six months."

Because Sensible and DID have a proven reputation, they had no trouble getting Ocean interested in their respective games. For someone with a game or idea who has had no experience with software houses, it's a little harder. Jon Hare: "Getting a deal is easy, getting the right deal is bloody hard. The best thing is not to start with too ambitious a game – you don't want to put people off before they have a chance to get into it. Most of all, the game should be polished, well presented, clean, bug-free and flow well. The most important thing about any game is the control system. The user interface should be friendly, and the whole thing has to fit together properly. Information should be displayed as simply as possible. That's partly why *Mega Lo Mania*'s control system went through so many revisions. There's a heck of a lot of information in there."

Martin Kenwright agrees up to a point. "Many software companies are full of promise, but most of them fail to deliver. Anyone with a game to offer should make sure they have a comprehensive design



● **Martin Kenwright, one of the founders of Digital Image Design, the team behind F-29 Retaliator, Robocop 3, Epic and Epic 2 (in development), on aspiring graphic artists: "Give us a call and we'll give them a job!"**

MYTH TWO: COME THIS WAY, MY SON...

There's a common story among software folk. It's the one about the inexperienced programmer who writes a fabulous game and takes it to a big company, who then steal the game ideas, fob the programmer off with a ridiculously low fee and make a pile from the resulting hit game.

This may have happened – and it may have happened more than once. But it doesn't happen all the time. Think of the situation that's likely to arise if it did: the software houses' reputation would preclude them from taking on new talent.

If you have a good idea to offer – or a completed game – get in touch with someone who's had experience of the software industry and who knows what sort of deal a new programmer would get. This may be easier said than done, but it's worth the trouble – you wouldn't want your name popping up in apocryphal stories of injustice in the future, would you?

and not have copied too many ideas. It's no good if an aspiring graphic artist does pages and pages of sprites that all look like existing designs. Software companies like to see authenticity. Another trick the companies use is to tell graphic artists to go away, get together with a programmer and do something solid. You have to be wary of this because sometimes it's just a way of getting people off their back.

"The software companies' acceptance of new game ideas depends on their funding and how complete the game is. They're far more likely to take on a game that's half completed than one about which the programmers say, 'Well, it's going to be great in two years time.'"

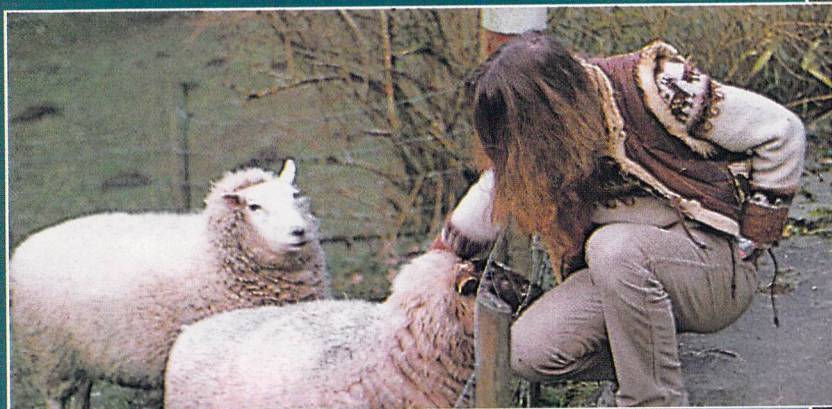
"It's strange – we're constantly trawling the colleges looking for talented amateurs, yet there are still hundreds of hopefuls out there who can't get a job. There's an irony there somewhere." **stf**

MYTH THREE: BONKERS

There's a generally-held belief that all programmers are: (a) weird, (b) unable to speak one sentence without slipping in a reference to "clock cycles," "bit shifts" and "self-modifying code"

and (c) clinically insane.

This myth is actually – unfortunately – entirely true.



● **Jeff Minter – a programming genius, a man who can write several games at once and still have time to feed his sheep. Also a very real example of what happens to programmers after a while. Remember, programming screws you up.**

Three questions of sport

Psygnosis and *ST FORMAT* have got together to bring you this fabulous compo to celebrate the release of *The Carl Lewis Challenge*. We're too good to you...

How does a one week holiday in Spain sound, eh? (Usually like this: "We're all off to sunny Spain... hey, let's visit that quaint bodega... ocho cervezas por favor... what d'ya mean, you thought I brought the sun tan lotion?... God, I really shouldn't have had that last tortilla... is it over already?" Or something like that.) Well, it could be you lazing about in the scorching sun trying to remember what the Spanish for "toilet" is. Listen carefully...

You may or may not know that Psygnosis have just released *The Carl Lewis Challenge*, a simulation of the world famous athlete's own sporting

endeavours, endorsed by none other than Carl himself. As the Psygs are rather chuffed with their new game, they've decided to run a really rather attractive compo to celebrate. Hence they, in association with those wonderful entities at Mizuno Sports and those horrible persons at Future Publishing, are offering you the chance to win this mucho fabuloso prizo:

- A one week holiday for two in Spain, including flights, hotel accommodation, and two days' worth of tickets to the Olympic Games in Barcelona to see Carl Lewis (the real one) doing his stuff – and all them other athletic types too,

obviously. And you're also going to earn the right to go up to Carl just after the race when he's all tired and hot and sweaty and say, "Ere, Carl, can you sign this game for me?"

You can also visit the city of Barcelona, take a trip to Andorra, gasp for air in the Pyrenees, get wet at the Agualandia water park, or just get skin cancer on the beach 200 metres from your hotel. Oh, and there's £250 spendin' money thrown in, too (repayable in easy instalments. No, just kidding.)

But that's not all! You're also going to get a Mizuno goodie bag, including trainers, a T-shirt and shorts; a Psygnosis baseball cap, T-shirt, poster and

badge; a year's subscription to *ST FORMAT* (that's the thing you're reading now); and a chance to write about your hols for *STF*.

Six runners-up will each get:

- A Mizuno goody bag, with the trainers and all that,
- A Psygnosis baseball cap, T-shirt and badge...
- And that year's free subscription to *STF*.

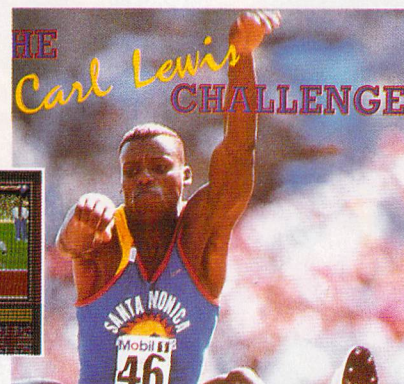
20 third prizes:

- A year's free subscription to *What Rabbit?* – er, no, *STF*.

And...

- the first 50 correct entries will get a free surprise gift from Mizuno Sports.

● "We're all going on a summer holiday, we're all going to see Carl Lewis..." Well, you could be if you win this fabulous compo from Psygnosis and *STF*.



All that's incredibly generous, we trust you agree. Here's the boring bit with all the questions.

Answer these three inconceivably easy questions correctly:

1. In what ridiculously short time did Carl Lewis smash the 100 metre world record in Tokyo last year?

- (a) 10.00 seconds
- (b) 9.86 seconds
- (c) 9.80 seconds

2. What's the name of the famous sports-wear company whose shoes are worn by Carl Lewis?

- (a) Reebok
- (b) Nike
- (c) Mizuno

3. How many control options are there in the game? (Hint: look on the back of the box.)

- (a) 3
- (b) 2
- (c) 5

A snip, eh? Stick your answers on a postcard or sealed envelope with your name, address, daytime telephone number, age and parent's signature (if you're under 16) and wang it off to: The Carl Lewis Competition, Psygnosis Ltd, South Harrington Building, 182 Sefton Street, Liverpool L3 4BQ. The closing date is 10 am (UK time, remember) on Friday 17 July 1992. The first prize winner will be the first correct entry drawn from the bag after this time. Hasta la vista, and other such phrases. **stf**

SERIOUSLY HEAVY RULES BOX

The competition is open to residents of the UK, France and Germany only, except employees of Psygnosis Ltd, Future Publishing or Mizuno Sports. The entry instructions form part of the rules.

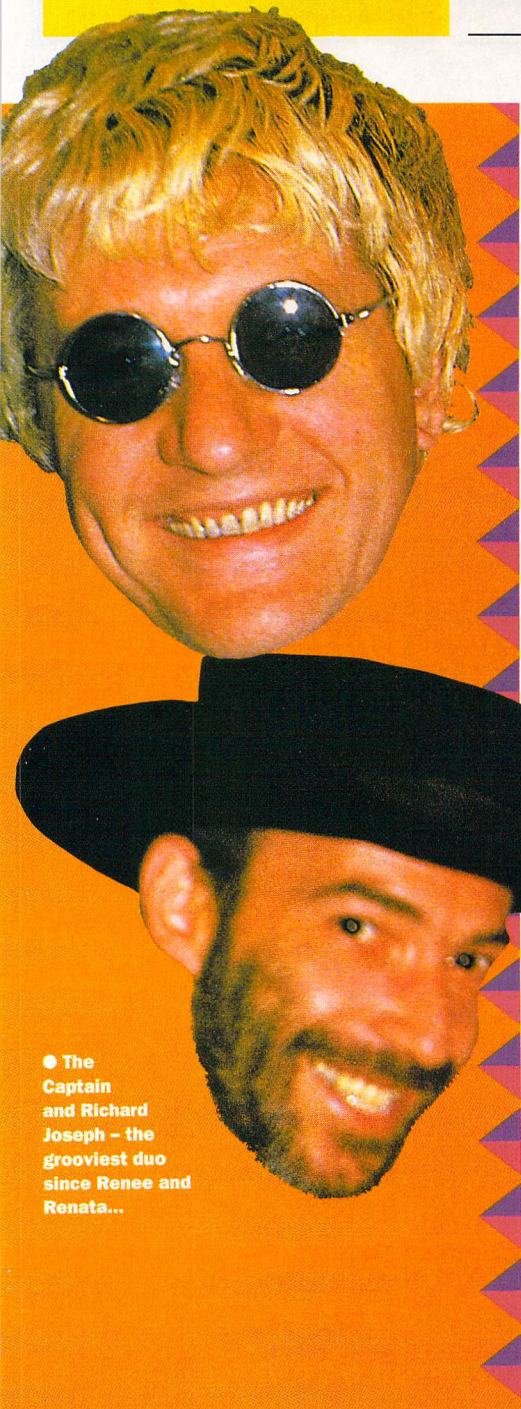
The prizes are as stated; there are no cash alternatives available. Competition forms must be received by 10 am (UK time) on 17 July 1992. The prizes will be

awarded in order by a serious man in a suit to the first 27 correct entries drawn after the closing date. The first prize must be taken on the given dates, from 1 to 8 August 1992 (departing 13.50 on 1 August 1992 and returning at 19.15 on 8 August 1992 – sunspots and British Rail permitting). The judge's decision is final; no correspondence can be entered into.

The winners will be contacted on 17 July 1992 and announced in *ST FORMAT*. Entry implies acceptance of rules, including instructions, as legally binding. (Blimey.)

Entries must be on a postcard or sealed envelope, or in the case of international entries, can be faxed to Psygnosis on +44 51 709 6466. Proof of posting not

accepted as proof of delivery. Entries lost, delayed, illegible or insufficiently stamped will be disqualified, so watch out. No purchase necessary to participate, except of course this excellent copy of *STF*, which you've bought anyway, and if you haven't, you should go over there to the counter right now and pay for it. You know it makes sense.



● The Captain and Richard Joseph – the grooviest duo since Renee and Renata...



● "England 1 Sweden wot?"

The Sensible approach

After the *Bomb the Bass* and *Xenon 2* coupling, people expected pop personalities by the thousand to be flocking to the ST screen. It didn't happen – at least until a certain Sensible reappeared...

Throughout the annals of pop history, there is one name which pops up all over the place time and time again. There is one man who has struggled to present his own particular brand of music, his own unique attitude – and his own beret. That man is Captain Sensible. Some people call him great and others call him "that bloke out of *The Damned*." But most people just tend to call him Captain.

You may or may not know that the Captain is a big fan of the ST, and of games in particular. In fact, he reviewed the now budget-burgeoning *Monty Python's Flying Circus* for *STF* back in issue 14. So when Sensible Software's *Sensible Soccer* was first previewed, the Captain couldn't help but add his redoubtable Sensible moniker to the game by offering to do the music.

Abetting the Captain in this task was a veteran of the games music scene, Richard Joseph. Richard created the music to (among others) *Mega Lo Mania*, *International 3D Tennis*, *Gods*, *Speedball 2*, *Magic Pockets*, *James Pond*, *Robocod* and the reviewed-on-page-76 *Wizkid*.

Ed Ricketts caught, if you will, up with the Captain and Richard, to find out more about this Sensible-Sensible-Joseph triumvirate. He said, "Captain," he said, "Wot?"...

How did you get involved with doing the music for *Sensible Soccer*?

Sensible: I was browsing through *ST FORMAT* and I saw a news bit on the demise of Captain Bob, Mirrorsoft and all that stuff. But it was the name that grabbed me – Sensible Software. I thought: "Blimey! That's a good name!" So I phoned them up. I really like using telephones – I have a lot of fun with them. Anyway, I said: "I've instructed my lawyers to sue. We're going to take you for every penny you've got," and they thought it was one of their mates from down the pub winding them up. But I convinced them I was the genuine Captain Sensible and they invited me up to see them and we did this. They're a good bunch of people. I just wondered who would be behind a name like that – it's generally people who aren't that sensible – like me. I mean, I built my entire career around drunkenness.

What sort of arrangement did you have? Did you write the whole lot, with Richard then cod-

ing it, or did it go backwards and forwards between the two of you?

Sensible: They said what sort of thing they wanted. I played something I had to Richard and he liked it, so then he did all the hard work. I didn't realise what sort of format he needed it on – it was all over the place at first, but he somehow made sense of it. You don't just knock it up on a sequencer and give it to the games people, do you?

Richard: It's not that difficult to do. The Captain did it in a form that could be easy to translate – the medium of ST samples is so easy to work with. You've got drums, bassline, frontline and all that sort of thing – you can easily put it onto your available three or four channels. In the case of the ST, it's being done on a four-channel simulator. It was very easy to do.

What sort of equipment did you use to write the original tune?

Sensible: Just the D-70 and *Cubase*.

And it was fairly easy to translate, Richard?

Richard: Yeah. I've got *Cubase*. I haven't got a D-70 but I've got a Roland module that has fairly similar sounds, and they seemed to work.

Would both of you do it all again? Captain, would you be willing to do more game music, and Richard, would you want to work with more "famous" people?

GLAD IT'S ALL OVER... THEY WILL BE

Once the Captain and the Richard got started there's no stopping them. We had a heck of a time wrenching them away from the Captain's hardware to do the chatting stuff. Rock 'n' roll animals!

Richard: Yeah, I like working with famous people!

Sensible: Yeah! We did some promo pictures at Wembley for the game – and I haven't been since I was a schoolkid. I met the Sensibles up there and one of them ["Ubik" – David Korn] was carrying a bottle of whisky around with him! They're a genuine bunch of good slobs.

The thing is, when I write songs I can't foretell what's going to come out. Sometimes I sit down and try to write something really loud and nasty, and this little theme tune sort of comes out. So it really would be good to be able to use some of these things.

I'm a real games fan and some of the music – I think – is really sub-standard.

Which leads conveniently into the next question. What do you both think of the current state of music and sound effects in games?

Sensible: I've heard some t'riffric stuff, but then there's some other stuff – I mean, in some of the games I've got, if only they'd put in an option to turn the music off, it would've been great. You have to ditch the joystick and lunge across to the monitor to turn the music down – you know, because it's just so bad. And it's louder than the actual sound of the engine in this particular racing game I'm talking about.

Richard: I've always had this battle against the traditional type of games tune, especially now there's all this Japanese stuff going on. It all sounds so Jap to me, music does. The trouble is, people expect their next game to have that sort of tune on it to keep up with the consoles or whatever, and I don't like that at

It's good to be able to really blast the volume up. If the sound's so good that you can do that to it, that's really exciting

CAPTAIN SENSIBLE

all. I think music is huge – there's so much of it that you ought to be able to exploit it all. The trouble with music is that people have such defined ideas of what things should be, and there's just not enough scope. Having said that, I think there's a lot of good music on games.

How much influence do you think sound effects have on games? Can they make a mediocre game better?

Richard: They have a huge effect. They can make a great game really good – there's no question about that. I think games are dead before they have sound effects. I think they come alive when the sound

effects go on – but they don't make a bad game good. I know that, because I've had plenty of positive comments about my sound effects or sound, and the game's just died.

Sensible: I know it's not the same sort of thing, but I was involved with a voice-over for a TV programme. I heard one episode with the music and all the sound effects and stuff, then they said "We haven't actually put the sound on this next episode," and it was totally flat! I thought "Blimey! We're not going to get away with this!" It makes a total difference. *Llamatron*, for instance – the sound on that was fantastic, it was just totally wild.

Richard: Jeff Minter does his own sound effects. That's what makes them good. If you've got somebody who does all the designing and all the programming, they're right in there doing it all – that's the answer for me. I can think of one or two other people who can do that and I'm always very impressed by them. When I hear of these things being done by just one person, I just think "That's it. I'll give up."

Sensible: It's good to be able to really blast the volume up, or bung it through the hi-fi. If the sound is so good that you can do that to it, well... that's really exciting.

To what extent has the music industry been influenced by the rising popularity of machines like the ST? Has there been any influence in the opposite direction?

Richard: I can think of one or two companies who have been influenced very much by the music industry. As for the music being influenced by the ST, yes, very much so. The ST is in everybody's studio.

Sensible: It's been in every studio I've been to.

Richard: Everybody uses *Cubase* or *Notator*. A lot of people who do the rave music type of stuff are very much into the *Notator* style of things, because you can do patterns and link them all together.

The ST really has influenced the music business in a huge way. It's put a lot of people out of business.

Really?

Richard: Yes. Musicians like brass players, violinists and stuff – you just don't need them any more. You can just sample the music you need.

Sensible: I think it's absolutely fabulous that such powerful stuff is in the hands of people who want it now, not just in the hands of rich producers. In the

music business, it used to cost hundreds of thousands of pounds for Fairlights, Synclaviers and all that – now anyone can get hold of it. That really is the way it should be, because nowadays there's no excuse for making a bad record. A lot of the records in the charts now have been done by people at home, and I think that's great. It gives the fat cats a kick up the jacksie, and deservedly so.

It's the same with the revolution in DTP. It enables alternative ideas to be spread, which is great. I'm going to get into that sort of thing when I get my printer! Do they do one that puts the little silver band in ban-knotes?

Moving swiftly on... what advice would you give a talented sound effects person who wanted to break into computer games?

Sensible [to Richard]: Wouldn't it be a good idea to send some sample stuff to the companies?

Richard: No, because no one ever listens to it.

Sensible: Oh, it's like the music business, then!

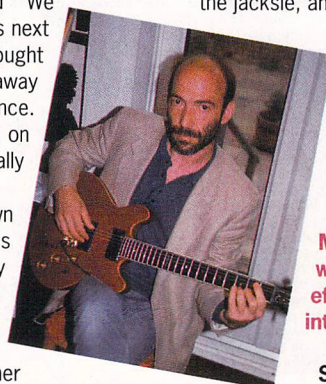
Richard: What they do is send it to people like me and say, "Have a listen to this." That's quite helpful really, because something might come up and I'll think, "Ah, that particular person could do that."

The thing is, the major companies have got very low budgets for their sound people. What they want to do is hire people and train them over a year or two. It's early days and I don't know how this could work, but at the moment, there are very very low budgets for people at ground level – but good opportunities. No one must hear this, by the way!

I started by looking through *Melody Maker*, looking for a band or something for my spare time, and Palace had an ad in there. That's how I started. I really wanted to join *The Damned*!

Sensible: Ha! But you could play music! We did some auditions once for *The Damned*, and they had to stand there with their trousers around their ankles, playing the guitar, while we poured lager over their genitals. If they flinched and stopped playing, they were out. There was a line of people sitting outside the room, and they could hear the shrieking and laughter. Then the poor bloke would come out with his trousers down, drenched, and the next one would go in – terrified!

On that ignoble note we must leave Captain Sensible to finish off his new album, due soon – a concept album about a man called Geoffrey Brown who hears messages from space. Sensible? We think not. **stf**



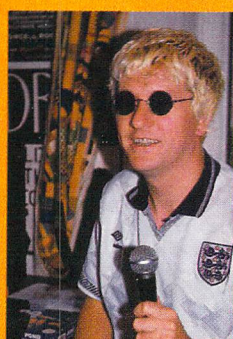
● Richard strums the opening chords of Derek Smalls' *Jazz Odyssey*.



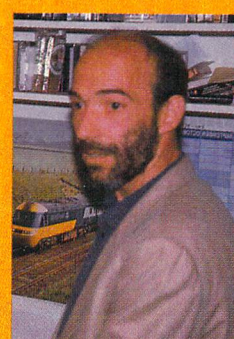
● "Look, you can press these bits and they make a noise!"



● "Yee, but you have to get the grin right too, y'see."



● "Got the grin, but where's the flamin' camera gone?"



● "Baaaaa..."

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A278 - ARCHIVER DISK 2. ARC V5.21d, ARCSHELL V3.0 by LGF Software, ARCSGH V4.1, ZOO V2.1, ZOOSEH V0.6.
A276 - SUPERBOOT V7.4 is an "all-in-one" type program that does just about everything you could ever want to do each time you boot our computer.
STW 41 - FSELECT V3/1989 the excellent alternative file selector.
A111 - HEADSTART V1.1 auto-boot any program from your AUTO folder.
A125 - RECOVER copies specified sectors to a named file.
A135 - GEMINI desktop replacement similar to NEODESK.
A236 - KAODESK V2.00 desktop replacement similar to NEODESK.
A231 - GOGOST V3.2 is a replacement for the file selection windows on desktop.
A41 - MONOCHROME EMULATOR v5 run most mono only. prog in colour.
A167 - BIG COLOUR EMULATOR run most colour only programs on mono monitor.
BP5 - CASSETTE LABEL PRINTER produce music cassette labels. £4.00.
A171 - RECOVERABLE Trashcan allows you to retrieve files deleted.
A181 - INTERPRINT2 the printer controller. PRINTPLUS V1.1 prints 1st Word documents.
A191 - MAXI RAM disk upto 4MB RAM.
A204/205 - HP DESKJET utility disks lots of printer drivers and utilities. £5.00.
A207 - GRABBER this program allows you to store any 4 programs in RAM and execute them from within other programs.
A111 - Boot Drive Select. BSSS stores bootsector in the event of a virus infection. Custom Formatter create disk of almost any format. DiskCat database system for your disk collection. Revenge Document Displayer V2.0 the best SCANAPIC rip out pictures from programs.

A214 - PUNCHER

V2.0 print out linking machine punch cards from picture!
UUK - ULTIMATE VIRUS KILLER recognises 50 Boot Sector and Link viruses can search, destroy and immunise disks. The most comprehensive virus killer on the ST! £10.00.

A218 - SAGROTAN V4.17 a very reliable virus detector and destroyer.
A195 - VKILLER V3.84 anti virus util.
A275 - FLOW CHART COMPILER V1.0 a programming language for producing flow charts.

A273 - ENGLISH to GERMAN translator V1.9. 15,000 words known.
A260 - ELECTRO V2.2 a mono complete electronics CAD package.
A237/238 - AMATEUR RADIO Packet Elterm V3.3a, Wotl Mailbox, YARP V2.0, Aurora plot, Morse and more. £5.00.
A44 - STAR NET Bulletin Board System the bestest PD BBS system.

A48 - UNITERM V2.0c 014 THE terminal comms program for the ST.
A166 - VANTERM V3.71 excellent all features communications program.
A119 - FLYING START V1.04 1200/75 comms program for Prestel.

GAMES

Note: Unless stated all games require a colour screen (TV or monitor).
GP51 - ARCADE CLASSICS 1. An amazing pack full of nostalgic arcade games including: Space Invaders, PacMan, Galaxians, Boulder Dash and Donator. 4 disks £12.00.
GP59 - ARCADE CLASSICS 2. Mr Dig, Helicopter, Bounty Hunter and Missile Command. Four disk pack £12.00.
GP54 - ARCADE PACK 3. Explore different worlds in these brilliant platform games: Parabolium, Gold Rush, Dr Boris, Zerphod, Puzzler, Bird Squirt £12.
GP55 - BOARD & CARD GAMES. A mega compilation of all classic board and card games includes Othello, Safe As Houses, Fire Game, September, Triple Yaltzee, Draw Poker, Cribbage, Monopoly and Patience. 4 disk pack only £12.00.
GP56 - ADVENTURE GAMES. Four excellent new adventures to take you into different worlds. Includes Don't Bank on it, Awake Chasm, Mystic Well, Ditch Day Drifter, Hack, Lan, Star Trek, Colossal and Darkness Forever. 4 disks only £12.00.
GP58 - MONOCHROME GAMES 1. for owners of an Atari monochrome monitor an excellent variety of games which include 17 games A special 4 disk pack for only £12.00.
GP510 - MONOCHROME GAMES 2. for owners of an Atari monochrome monitor an excellent variety of games which include 12 more new games A 4 disk pack for only £12.00.

GP73 - REVENGE MUTANT Camel by Jeff Minter another blast 'em to pieces.
G142RG - 1MB INTERNATIONAL CRICKET II play cricket with full graphics of the batsman etc. Excellent! Only £10.00.
G155 - PLUMB CRAZY a pipe mania comp where you have to construct a pipe line before the fluid is released.
G88 - BOXING CHAMP train in preparation for the big fight. Then it's you against the computer for the big punch up.
G92 - 68000 Fruit Machine a brilliant Fruit Machine game.
G60 - INFILTRATION by Robin Ball. A brilliant 3D full graphic game.
G67 - PENGUIN a Lemmings type game.
G134 - PUZZLE CREATORS - Create crosswords, spiral and Multiple Choice word puzzles.
G26 - LLAMATRON a mega blast 'em up.

G28 - MYSTIC WELL graphics adventure.
G50 - SPECTRAL SORCERY an excellent game featuring wizards etc.
G63 - MONOPOLY V2.0.
G86 - TENNIS excellent full graphics.
G97 - 1MB. THE STAR TREK game. An excellent full graphics game with awesome sampled sounds.
G103 - POP EYED a 60's music trivia strip quiz, tastefully done.
G107 - PATIENCE by Eric Chapman an excellent card playing game.
G108 - FIRST SERVE a tennis game.
G117 - FLIGHT SIMULATOR.
G131 - 1MB. ANAGRAMS, you enter a word to see all the anagrams.

BUDGIE GAMES

NOTE: ALL B code games disks are Budgie Licenseware, these disks cost £3.00 each there can be no discount for multiple buys.
B1 - DAMONOID 20 planets, no less, have to be protected.
B4 - OTHELLO 16x16versi type board.
B5 - PRO DARTS 501 down.
B7 - BALL ZONE an Arkonoid type.
B8 - SPECULATOR simulation based on real futures markets.
B10 - MONEY SPINNER The slot machine!
B14 - GOLDRUSH A platform pursuit.
B15 - PERILS of Pentola an adventure.
B16 - WORD Puzzle Generator.
B17 - MAKE A BREAK trivia quiz with very strong snooker connotations!

B21 - IMPULSE a totally original concept!
B22 - BANDIT Electronic slot machine.
B24 - SLIPPERY SID has to munch his way through large quantities of pills.
B26 - CARRIER ATTACK the drama and excitement of Battleships.
B27 - PSICOTIC A space shoot 'em up.
B30 - A QUEST for Galaxia - Galaxians.

B31 - INFERNO platform set in hell.
B32 - RUNAWAY GUIDE a drone ship through the tunnels of the moon.
B34 - SAFE AS HOUSES - monopoly.
B36 - DOGFIGHT aerial manoeuvres.
B37 - MR DIG classic arcade.
B39 - ONYX an excellent shoot 'em up.
B40 - DIZZY LIZZY Across between Pacman and Boulderdash.
B41 - EXODUS Awesome shoot 'em up with fantastic graphics!

B50 - SPACE INVADERS.
B54 - AUTORAMA Drive an automobile around a maze.
B58 - BERT THE SQUIRT An 80-level game designed to help Bert get fatter.
B59 - Q-ORB explore galactic cells.
B61 - A WINTER'S TALE 40 levels.
B62 - COLONY An excellent scrolling 'missile command' variant.
B64 - CASTLE FRANKENSTEIN create a Monster platform game.
B65 - DOUGLAS II Boulder Dash.
B66 - MISSILE ALERT!
B67 - CALO A Boulder Dash type.
B70 - PACMAN ST The definitive version.

B72 - AVENUE BLUE A horizontal scroller.
B77 - DENIS AND DENISE platform.
B79 - SHARKS a hangman style gamew here you get eaten by sharks!
B80 - TRAVEL GAME travel the world.
B83 - CYBERSTORM a megablast them to pieces like the classic Defender.
B86 - QUARTIS a tetris variant.
B87 - WHOOPSY guide a baby around a platform game.
B88 - ANNIHILATOR very good Galaxians.
B90 - MATCH IT a superb 'shanghai' variant extremely well presented.
B91 - FLIPPED a really top-class puzzle.
B93 - BUG SPRAY.
B97 - TWOT TOT your hero is trapped in the 64 rooms of the Mansion of Madness.
B99 - BOMB DISPOSAL place 20 diodes in the correct sequence.
B100 - CLOD HOPPER a copy of the old 8-bit classic called Bounty Hunter.

GRAPHICS

GR45 - ROYAL PAINT V1.2 a good low res paint package that has the dozens of features.
GR45RG - ART WIZARD an excellent art package which is very sophisticated. It features include animate, fonts, printer and all the normal tools. £8.00.
GR47 - HENDYSOFT VERY FAST Mandelbrot and Julia set Generator. Excellent features a great zoom option.
GR42 - 1MB HPM DRAW V0.93 mono only object oriented drawing.
GR43 - 1MB BUTTERFLY ARTIST V1.0 mono only supports Degas & IMG.
GR36 - COLOUR SPACE by Jeff Minters.
GR6 - DEGAS Support disk - 155 fills, 10 brushes, fonts and printer drivers.
GR11 - PICTURE CONVERTERS 1: Tiny, Degas and NEO.
GR17 - PICTURE CONVERTORS 2: PrintMaster, Degas, NEO, Tiny, IFF, SPEC512, AIM, IMG.
GR20 - PICTURE CONVERTORS 3: Degas, Tiny, NEO, MACPAINT to IMG.
GR34 - PICTURE CONVERTORS 4: NEO, DEGAS, SPEC512, AIM, GIF.
GR19 - FRACAL ZOOM V3.1 the

most comprehensive fractal program.
GR21 - AM ST animation package. That used to be a commercial product.

PROGRAMMING LANGUAGES

L18-20 - GHOSTSCRIPT V2.11 postscript language interpreter. £9.00.
L21 - XLISP V2.1 by Dave Betz.
L22 - STANDARD LISP V2.07.
L1 - 65K ASSEMBLER, ST LOGO.
L13/L14 - MODULA-2 DEVELOPMENT SYSTEM v1.0 from ANA-systems. £5.00.
L15A/L15B - SOZOBON C V2. £5.
L3/17 - 2 Adventure writers. £5.00

MUSIC

M15 - THE ACCOMPANIST V2.4 a 16 Voice MIDI Sequencer. A fully working MIDI sequencer by Henry Cosh.
M21 - NOIZTRACKER V1.2 the full program and modules.
M22/23 - QUARTET Samples £5.00
M28 - NOISTE MUSIC MANUSCRIPT V1.0 MONO ONLY desktop publishing for Musical Notation and Musical Scores.
M29 - DIGI COMPOSER by Il Professore and Bitmaster of ISTARI. An extended version of Noise Tracker.
MIDI40 - WADDINGTON 32 track MIDIsequencer.

STE DEMOS

These demo disks will only work on an STE with a colour screen. **Special Offer!** Save 10% Buy all 15 of the following STE demos for only £27! Order code for all 15 STE demos is STE15.

D285 - Yo STE, Center Desktop (1MB), Weird Sines and Automation Bananfish.
D298 - Winter in July3D Stereo.
D503 - 1MB Astro stereo sound.
D144 - The Official Atari France STE!
D214 - Sound OFF.
D228 - 1MB AN COOL.
D229 - 1MB The Jungle demo!
D230 - MOVIESTE.
D231 - 1MB BOING STE.
D232 - 1MB NOISTE1 62 Fantasia.
D233 - 1MB 3D Scroller.
D234 - 1MB Psychodelic House II.
D251 - The Black Cat.
D252 - The 2nd French!
D254 - Tomorrow's World. 3D stereo!

LICENSEWARE

The codes B, BP, BD and SS used in this advert are Licenseware there is no more to pay. Public Dominator pays the author direct for you. No discount for multiple buys can be given, the disks are sold at the price indicated.

CATALOGUES

A concise printed catalogue is supplied with each order or is FREE if you send us stamped S.A.E. A disk based catalogue showing full details of all our products costs only £1.00 or is FREE if requested with any purchase of £10.00 or over!

CLIP ART

These 7 ClipIt! packs are all 5 disk black & white spot illustrations mostly scanned at 200 DPI. EXCLUSIVE to Public Dominator!
C151 - Sports, flags, animals, Borders, Halloween, hands, zodiac etc. £12.50.
C152 - Men, women, A to Z, arrows, explosion, cartoon, pointing hand. £12.50.
C153 - Fruit, herbs, meat, arrows, special occasions, vegetables, kitchen utensils, cups and glasses, art deco and breakfasts. £12.50.
C154 - More Art Deco, Babies, Boys and Girls, humorous, A to Z, scrolls, calligraphic ornaments. £12.50.
C155 - Christmas from both the 19th and 20th century from father christmas to borals and Xmas trees. £12.50.
C156 - Mythological Creatures and Monsters, an excellent pack of creatures from all over the world. £12.50.
C157 - Flower Power pictures of the most popular flowers, arrangements, borders. 3 disks £8.50.

SPECIAL OFFER! on ClipIt Volumes Vols 1-4. £45. Vols 5-7. £30.
CIP - A printed catalogue of all the images in volumes 1 to 7. £10 or £3.50 if purchased with any 1 Vol.
MP27 - GEM Clip Art Pack covers many many subjects all in the object picture format of GEM. 3 disks £8.50.

YOUR 2ND MANUAL TO THE ATARI ST.

Y2M - Having got your ST and read the manual you are probably still in the dark about the ins and out of using it. The book Your Second Manual goes in depth in an easy to understand way about every aspect of using your ST. If you are a new ST user then this is the book for you. £10.00.
Y2M6D - 6 double sided disks containing PD software mentioned & recommended in the book Y2M. £12.

Special Offer! - Y2M+Y2M6D = £20!

PD & Shareware Prices

Disk codes without a cost are priced equally depending on how many you buy
1 disk is £3.00
2 or 3 disks are £2.50 each
4 to 10 disks are £2.25 each
11 or more are £2.00 each.
All prices are fully inclusive.
All overseas orders MUST add £2.75 to total.

Computer Supplies - Blank Disks etc.

Blank disks with labels:

10-£6.00, 25-£13.75, 50-£25.00, 100-£45.00, 200-£88.00.

Disk boxes: 10 cap. £1.00, 40/50 cap. £6.50, 80/100 cap. £9.00.

Disks and box: 10-£6.50, 50-£29.50 and 100-£53.

Disk labels: 100-£3.00. Cleaning kit: £3.00. Mouse mat: £3.00.

Caring, sharing software

Strap me, this program is something called Shareware and the author wants me to register. What's all this then? Chris Lloyd finds out what it's all about

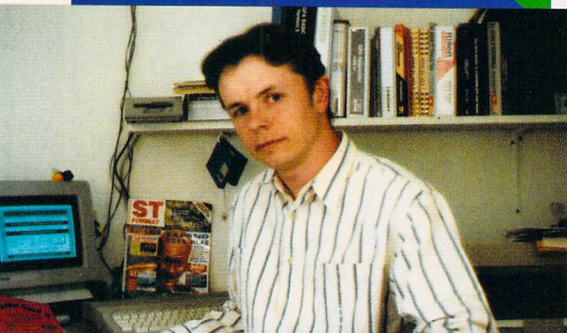


TURNING UP TRUMPS

Super Card 2 is a whizzo-featured card-based database that rivals the best commercial offerings, and it was featured on *ST FORMAT* Cover Disk 35. (If you missed that issue, see page 40.) It hails from an outfit called B Ware, who have made a number of Shareware releases. *Super Card 2* is by far the most successful, raking in £1,500 in the first two weeks – not bad going in anyone's book. It is the result of many hours' slaving over a hot monitor by Mark Butler, who is "extremely pleased" with the response. Mark feels the only way to make any kind of impact is through the Cover Disk, and he says it's thanks to *ST FORMAT* that *Super Card 2* is their most successful Shareware title by a long way. "We are grateful for every registration," he says. "Programmers are only human, and money and positive feedback coming through the letterbox does wonders." Mark explains that since the most precious resource, time, is limited, titles that don't generate many registrations may be shelved. He believes a good Shareware title is every bit as good as a commercial one; it's just not packaged and hyped and relies on registrations to survive.



● *Super Card 2*, a Shareware success story and a powerful utility to boot. Registration brings you a printed manual, updates and technical support, as well as a disk or two of other goodies.



● This is the man responsible for *Super Card 2* – Mark Butler, who programmed it in a mix of GFA Basic 3 and GFA Assembler. And a jolly good job he made of it too.

If somebody runs up to you in the street and asks you to explain what Shareware is, you're going to look pretty silly if you can't answer, aren't you? To save any embarrassment here's the low-down. Shareware is not a type of software but a method of distribution. The idea is that the programs are free to be distributed, copied and generally passed about. If you find you like the program and make use of it you're asked to make a contribution to the author and register your copy. The cost varies from a couple of quid up, and you often receive extras such as printed manuals, updated versions and other goodies as well as a warm feeling inside.

Shareware started out many years ago in the States and is a simple and effective way of spreading good software and giving a good deal all round. You get to try out the software fully before committing yourself and the authors get wide distribution without all the hassles and pitfalls of dealing with the commercial scene. And it's cheap. Shareware has none of the demands of the commercial world – programmers are free to produce the stuff they would like to, and if people register then they get the full whack. 100% of a fiver is a lot better than 10% royalty on a 20 quid commercial release. The sneaky types will

have noticed a small flaw – the whole thing relies on something called honesty. It's down to the individuals using the software to keep the ball rolling. You get decent software at reasonable prices and the programmers get some reward for long bleary-eyed nights in front of the keyboard.

Shareware makes use of the existing channels of distribution for Public Domain, the libraries and bulletin boards. Piracy gets one in the eye too. The whole point is to spread copies to as many people as possible – nothing is copy-protected and you are positively encouraged to spread it about.

How do you get your masterpiece distributed as Shareware then? Easy! Call it Shareware and it is. Simple, eh? Of course it has to be your own work, not a bunch of ripped-off code or graphics from elsewhere. Put a text file on the disk explaining how to register and release the finished thing to the libraries. Now all you do is sit back and wait for the wads to roll in, or not as the case may be. Let's face it, people aren't always as honest as we'd like. So to get things going it's an idea to offer some incentive to those good people that do register. Applications and utilities need manuals and possible updates and technical support. Perhaps you could offer another pro-

GETTING THE GOAT

Probably the most famous Shareware author is one Jeff Minter, from the depths of the Welsh hinterland. It all started with a game called *Llamatron* (STF Cover Disk 24), which featured a llama and lots of little aliens trying to kill it. Oozing gameplay, the addictive and manic blaster was an instant hit. Shareware registrations began to form a small pile behind Mr Minter's door – a five-figure pile eventually. Follow-ups – er, followed: *Colourspace*, a light synth, and *Revenge of the Mutant Camels* (STF Cover Disk 31), another blast featuring more of our furry friends. There's no fancy packaging, adverts or other gubbins to pay for, just a damn good joystick-thrashing game.

Jeff reckons he's made more by releasing *Llamatron* as Shareware than if he had put it out on a budget label. He's certainly received more feedback. One of the advantages of Shareware is a much more direct author-user relationship. As the man says, "no-one feels ripped-off, you get a chance to use the software first and only pay if you're hooked. It's democratic, honest and cheap." Can't say fairer than that, can you? The success of earlier releases means more from Jeff – a new game, *Hardcore*, is in the pipeline. Place your bets now on which furry animals it will feature!

● Jeff Minter, Shareware champion, lover of camels, machine coder and part-time astronaut. Registrations flow to his door-mat from all over the world – good Shareware exports itself.



● *Revenge of the Mutant Camels* features camels, goats and killer telephone

boxes. A brilliant slice of weirdness. Registration is a fiver, and in return you can choose from a range of other titles or an improved version of *Revenge*, including a lovely 1MByte STE version with even more wacky samples, rasters and smoother scrolling.

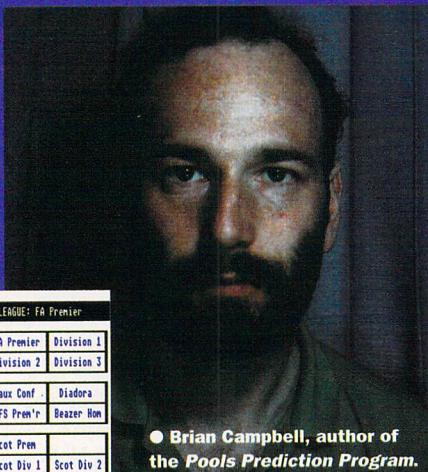
gram not available through the libraries in return, some sort of carrot to stir the punters into action.

Goodmans Public Domain library reckon on a take-up of 5% being pretty good going. "A lot depends on the way it's presented," Mike Goodman told STF. "You need to reward people's honesty in registering. Putting out Shareware is like getting involved in a huge user-group." Shareware is an

excellent way of giving a fair deal all round. Its continued success depends on support from the people who find themselves using a piece of Shareware software. In the end though it's all up to you. If you want more games like *Llamatron* and applications like *Super Card* then all you have to do is register your copies and bring a smile to a programmer's face. You know it makes sense. **stf**

PREDICTING SUCCESS

Brian Campbell started work on his *Pools Prediction Program* in 1989 and has worked constantly to update it and provide support for the over 1,000 people who have registered their copies. The proceeds have helped launch him into business for himself. Brian is "amazed by the response, which has grown from strength to strength every year." A lot of quality Shareware is American, and he reckons that one of the stumbling blocks is people's reluctance to send money abroad. It helps to have a UK address. Results from Shareware vary and the bottom line is the quality of the initial offering – if it's a quality bit of code and you offer people some incentive to register, then, Brian reckons, your efforts are more likely to be rewarded.



● Brian Campbell, author of the *Pools Prediction Program*.

League	Pld	H	D	L	G/D	Pts	Form
Man Utd	42	21	10	11	43/28	73	3W
Sheff Wed	42	15	10	17	31/39	55	2W
Arsenal	42	15	10	17	31/39	55	2W
Man City	42	15	10	17	31/39	55	2W
Liverpool	42	15	10	17	31/39	55	2W
Aston Villa	42	15	10	17	31/39	55	2W
Notm Forest	42	15	10	17	31/39	55	2W
Sheff Wed	42	15	10	17	31/39	55	2W
Crystal Pal	42	15	10	17	31/39	55	2W
Q.P.R.	42	15	10	17	31/39	55	2W
Everton	42	15	10	17	31/39	55	2W
Himbleton	42	15	10	17	31/39	55	2W
Chelsea	42	15	10	17	31/39	55	2W
Leeds Utd	42	15	10	17	31/39	55	2W
Southampton	42	15	10	17	31/39	55	2W
Oldham Ath	42	15	10	17	31/39	55	2W
Notm City	42	15	10	17	31/39	55	2W
Coventry City	42	15	10	17	31/39	55	2W
Leeds Utd	42	15	10	17	31/39	55	2W
Notm City	42	15	10	17	31/39	55	2W
West Ham Utd	42	15	10	17	31/39	55	2W

● Registration of the *Pools Prediction Program* brings the very latest version winging your way with bang-up to date league tables.

LICENSED DISKS

Licenceware is slightly different – you pay up front for the program when you buy it from approved vendors, and part of the cost is passed straight on to the author. There's no registration – the writer's already got his cut. By far the largest purveyor of Licenceware are Budgie, with over 100 titles available through authorised PD libraries (see STF's directory, page 48), ranging from games to applications. Budgie are run by Camy Maertens – he brings together the efforts of 40-plus programmers. Another Licenceware range is the excellent Shoestring educational range and there are many other efforts. There are some damn good slices of software, and for under three quid you can't complain much, can you?



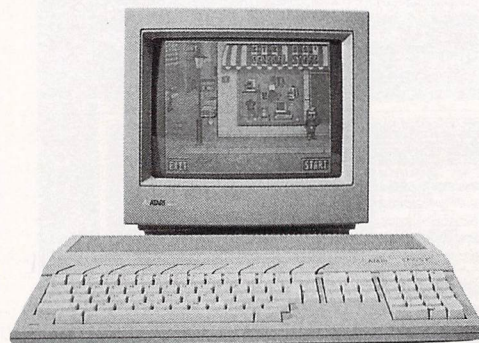
● Alien-bashing blaster *Annihilator* from Budgie. It's smooth, blue and green and involves shooting – just what we like to see. Budgie has over 100 games titles – platform games, puzzles, adventures and all sorts.



ATARI REPAIRS JUST £49.95 inc.



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* If you require 24 hour courier to your door, please add £5 else your computer will be sent back by contract parcel post.

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DESK ACCESSORIES & UTILITIES

U001 Dir printer, RAMdisks, Snapshot screen save, Desk Acc. loader.
U003 Desk, ACC's formatter, calendar, Disk Manager, calculator
U008 68000 Assembler, Address/Mailing List, Autodial Utility
U009 PICSWITCH 7 changes pics graphics res. Mono/colour emulators.
SWITCHER, 2 progs in memory. FSEL 5.5
U010 STE BOOTUP, boot medium res
U014 ARC file compiler, BI CLOCK set time/date. MONOEMULATOR v5.0.
U016 IBM compatible disk formatter. ARC SHELL v1.91. MEGA formatter
U019 DRFLOPPY, disk editor, SCODE make ASCII for data transfer
U023 Packed with various progs for printing all kinds of labels. *M*
U024 CHK 2.3, All you'd need to know about a disk. IBM MODIFIER, alter DS Atari disks for use on IBMs.
U027 ANTIDOTE, detect & kill most bootsector viruses.
U028 DISKMECH disk analyser/archiver/editor, edit/format sectors etc, full docs. CPANEL
U030 AMC GDOS
U032 MOUSE TRICKS, extensive control over mouse, movement etc.
U033 MX-2 v2.3 a multi-tasking environment, up to 7 concurrent tasks. *D*
U034 DOUBLE CLICK format v3. 03 9/10 sectors, 80/82 tracks,
U035 DEC edit clone, Disk engineer v3.01 do also to a disk via GEM.
U040 AUTOGEM autoboots Gem programs. VC Spreadsheet non-GEM.
U041 ADDRESS LOG, Address book & label printer, disk catalogue.
U046 SUPERKILLER detects 5 viruses, 7 anti-viruses.
U050 GEMINI Desktop replacement. English version *DXS*
U052 GEM PLUS, Neodesk variant.
U057 GEMDOS USER GUIDE, full of info about GEM-DOS
U058 ATARI TOS 1.4 bug fixes (STFMs with Rainbow TOS)
U059 XCONTROL: ATARI's latest TT control panel accessory for all STs.
U063 MEMFILE 2.0: Memory and disk editor with powerful features.
U065 STDCAT v4.0, disk catalogue.
U067 ARCSHELL v3.0, Arc V6.0
U068 HITCHHIKERS PD shareware disk 2.0
U069 ST Zine shell, Disk mag development tool.
U070 SUPERB Intro creator, sprite, pics, text & music
U073 SUPERBOOT V7.0
U075 ST TOOLS, many features
U077 GOODIES, multiple featured desk accessory
U080 JAMES, the desktop butler.

GRAPHIC, FONT AND ART/DRAWING DISKS

A005 PALART, excellent art program with full doc files. *C*
A009 COLUMBIA, Drawing prog, some 3D elements. Studio (*X*), Drawing package. Both German
A012 DOODLE, mono & colour versions. Also some Mandelzoom pics.
A013 ST GRAPH: Comprehensive graph prog, handles bar, horizontal/stacked bar, line & dot charts.
A015 FONTS2, 7 screen/desktop fonts. inc. Columbia, Devoll, Hudson
A018 CANVAS, great art package
A020 PALETTE MASTER, art package, up to 512 colours. *C*
A024 FRACKTAL drawing program from Germany. Mono/Col.
A025 FONTKIT 3.31 *D*
A027 ANI-ST, ex-commercial package, quality animation system
A029 MASTERPAINT drawing package, excellent. Mono & Col.
A030 PICWORKS, enlarge/reformat pics up to 3 times normal size. *M*
A034 PUBLIC PAINTER, *M*
A036 SNOOPY cartoon pics. *C*
A042 ST CAD v2.1, a med/high res CAD package. Full docs. CALC-PLOT, scientific calculator
A043 THE ARTIST, Great drawing package with many options. *M*
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A053 MOVIE CONSTRUCTOR, FACE ANIMATOR. *M*
A054 SIMPLE DRAW v3.4, art package. Docs foreign. Med/Hi-res
A059 MASTER DOODLE, shareware art package for the younger user.

CLIP ART

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C003 Sports figures, July 4th logos. C015 Babies, boys and girls
C010 Occasional Clips, Characters C016 Girls, Scrolls and Occasional
etc. Clips
C011 Loads more fruit, vegetables. C017 Artdeco, Baby boy & girl
C012 Herbs & Kitchen parts. C018 Varied Humorous Clips.

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W001-006 TEX, 6 Disk Pack, document processor. *M*
W008 1st WORD wordprocessor. Professional fully GEM based
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GAMES DISKS (colour unless stated)

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G018 RUSH, move bricks to create a way out for the ball.
G020 YAHTZEE, popular game.
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G025 ENGLAND Team Manager
G027 DIE ALIEN BLOB, a great shoot 'em up, excellent graphics.
G028 TREASURE SEARCH, find the hidden treasure. *SD*
G033 ADVENTURE WRITING SYSTEM
G037 TUNNEL VISION, maze game
G038 BERMUDA RACE 2
G039 INVASION, adventure
G041 Hack! is a D&D adv.
G045 AYATOLLA, terrorists attack. *S*
G046 ROBOTZ, 40 levels, great
G047 FRUIT MACHINE simulator
G056 SLIDE, 3 levs, puzzle. *S*
G063 SOLITAIR 3D graphics. Macpan, Galaxy & Sprengmeister. *M*
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G162 REVENGE OF THE MUTANT CAMELS 1 or 2 players.
G164 SPACE INVADERS, a classic
G165 BLOCKADE, Qix clone
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G169 ROCKFALL, boulderdash type.
G172 ENTOMBED, platform 5 levels.
G176 ARMOURLYTE, horizontal scrolling shoot 'em-up.
G177 GRAV, rotate & thrust.
G178 MAZE, split screen, 2 players + editor, great.
G181 OZONE, platform/puzzle, many enemies, shareware game.
G182 PDBOLO, excellent Arkanoid clone, colour & mono *DX*
G183 INFILTRATION, defeat the aliens, shareware.

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S002 ST SHEET, quality spreadsheet *C*.
S005 B/STAT v2.01, sophisticated graphing & stat analysis. *DX*
S007 OPUS v2.2, GEM based spreadsheet & charting program *DX*
S009 WG-DATA, high quality DTB. Full docs.
S011 DOUBLE ENTRY, fully working accounts package (no VAT)
S012 PERSONNEL DTB, Names & addresses DTB.
S013 INVENTORY PRO V2.0 stock control system.
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S015 ZAPCARD easy to use card type DTB.
S016 SHEET V2, spreadsheet. Similar to Lotus 123. docs.
S017 DATAPLOT, sophisticated data plotting package.
S019 FASTBASE, absolutely brilliant, sophisticated shareware database. Excellent features.

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CD001 PACK-ET-TERM v3. 3a, radio package with docs.
CD005 UNITERM v2.0a with auto-dialler & phone book.
CD006 VANTERM 3. 71 & 3.8 great communications package.
CD009 HAGTERM ELITE v3.3 powerful shareware comms package.

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M008 KEYBOARD program, various songs & samples.
M012 SINGING CALIFORNIAN RAISONS. *X*
M013 MUSIC WRITER, create music.
M016 CASIO CZ SOUNDS & EDITOR
M020 XBIOS Music Const. Kit.
M021 PERCUSSAMAN, 4 track, 16 instrument, synthesised sequencer.
M022 SOUNDTRACKER PLAYER & MODULES. D_DREAD1, D_DREAD 2, PAT_MIX, RVB_DEMO, SPREAD.
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M031 DBRK4802, daybreak step time sequencer v3.
M035 ACOMPANIST 2.4, 16 voice shareware sequencer.
M040 EDSYNTH 1.2 music synthesiser.

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E002 WORLD MAP GAME.
E004 Spelling Made easy
E005 REBUS WRITER, design & print rebuses. Samples included.
E006 BARNYARD, pair the animals from memory. *C*
E007 WELCOME TO CHEMISTRY V2. *S*
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E015 KIDPUBLISHER, KIDSONG
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E020 GEOGRAPHY TUTOR
E021 ZOO MAKER, you're asked questions, the computer tries to guess the animal.
E022 ME FIRST, BUTTERFLY IN THE PARK.
E023 COLOURING BOOK.

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F009 THE PLANETS. *D*
F012 AUTOROUTE, working demo covering the south of England.
F013 POOLWISE V3.5, pools predictor. MED RES.
F016 ST TOUR, guided tour.
F017 YOUR SECOND ATARI MANUAL.
F018 NEWGEN V4, shareware, 10 record limit.
F020 ST TECHNICAL MANUALS.
F021 BUSINESS LETTERS, 100 business style letters in ASCII code.
F022 ASSISTANT CHEF, 142 recipes + add your own.
F023 ASTRO 22, astrology
F026-28 A ROMAN MYSTERY, graphic art images, Roman magazine, Graphic database with a murder investigation, plus more *3 disks*
F029 COMPACT OFFICE MANAGEMENT, excellent accounting program for small business' and sole traders. Comprehensive. *D*.

DEMO'S

D005 THE DEFINITIVE DEMO. *D*
D006 SLATATANIC CULT, Music Demo I & II. *D*
D007 ASTERIX DEMO.
D008 BOMB THE BASS.
D009 PENNSYLVANIA DEMO. *D*.
D010 SOUND CONNECTIONS. *D*.
D011 THE NEW YEAR DEMO. *D*.
D012 STINGRAY DEMO.
D017 COUNTERPOINT DEMO.
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July 1992
Two Disks: K-Spread 2 spreadsheet complete; Fire and Ice demo, Super Boot 7.4, money manager, and much more
Inside: 50 ways to soup up your ST; what happened to the games heroes of yesterday?

ISSUE 35

June 1992
Two Disks: GFA Basic v3.5, GFA Assembler, GFA Raytrace complete; Pacific Islands demo, complete database and astrology programs, and much more
Inside: upgrades step-by-step; ST astrology; program fractals

ISSUE 34

May 1992
Two Disks: GFA Draft Plus 3 complete 2D vector drawing package; Campaign demo; Intro Designer; six more full programs
Inside: 21 pages of art guides; ST Book portable tested; weird games; 120 tips; Buyer's Guide

ISSUE 33

April 1992
Two Disks: Write On complete package; Leander preview; two raytracing programs; complete Penguin game; fractals and more!
Inside: Over 20 pages of tips; complete guide to raytracing; get the best from Sequencer One

ISSUE 32

March 1992
Disk: Nightmare demo; Kozmic pattern generator – exclusive; STOS extension and more!
Inside: Find out how you can make money with your ST; reviews of STOS 3D and Timeworks 2; over 40 ST tips!

ISSUE 31

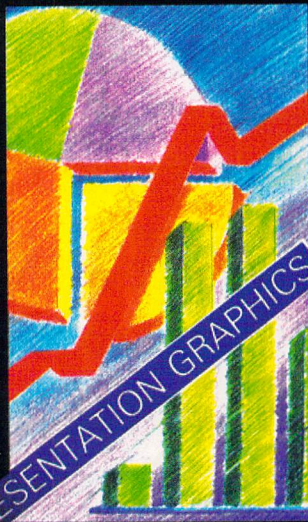
February 1992
Disk: Stereo Master preview; Revenge of the Mutant Camels – complete; ten utilities
Inside: All you need to know to get started with the ST; roundups of top software, games and add-ons; inside your STE

BACK ISSUES

Still in stock: STF 3 (violent games), 9 (scanners), 11 (piracy, comms), 12 (music), 13 (tips), 14 (the cost of games), 15 (DPaint), 16 (get active), 17 (50 games reviewed, hard drives, printers), 18 (Interphase), 19 (getting started), 20 (31 programs on Disk, plug-ins guide), 21 (animation), 22 (DTP, WP, recover lost data), 23 (3D, comms), 24 (Llammtron, ST video)

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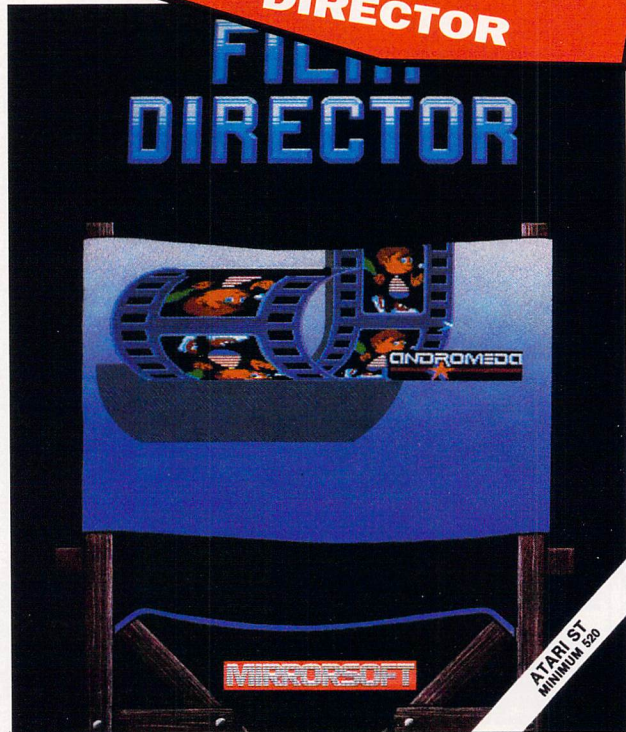


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ISSUE 30

January 1992

Two Disks: complete Sound & Vision packages, plus 'Get Started' supplement, *Populous 2* & *Baby* Jo demos; & much more
Inside: Being creative on your ST - DTP, programming, graphics and music, high res games

ISSUE 29

December 1991

Disk: Autoplay intro sequence creator, *Daylight Hobby* and *Stereo Replay* demos
Inside: Making your own intros, score-writing packages, ST-related book roundup, *Band in a Box* reviewed and rated

ISSUE 28

November 1991

Disk: Three traidal programs: *MG-23M Super Fulcrum*, *Home Accounts 2* demo
Inside: All you need to know about traidals on your ST, 25 'serious' packages reviewed, floppy drive roundup

ISSUE 27

October 1991

Disk: *Falling Honey* demo, ST Writer *Elite v4*, spiral pattern generator, six utilities
Inside: Professionals' graphics techniques: hard drive roundup Plus 250 best buys in our 24-page buyer's guide supplement

ISSUE 26

September 1991

Disk: *Ultimate Virus Killer*, *Magic Pocket* demo, *TOS 1.4* fixes and a swag of utilities
Inside: Protecting your ST from viruses: how ST's are being used to produce TV ads and business cards; *Caligrapher* reviewed

ISSUE 25

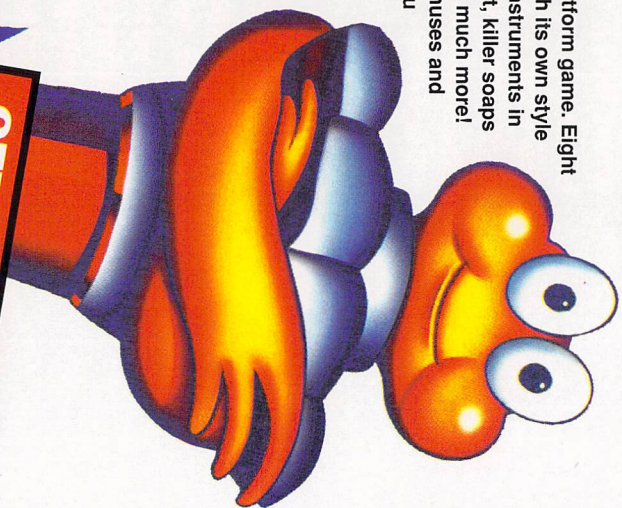
August 1991

Disk: *Mega 10* mania demo, *Flexidump* printing program, a diary utility and more
Inside: 20 printers scrutinised; memory upgrades guide; emulators roundup; *Soul II* Soul interview; PD library interview

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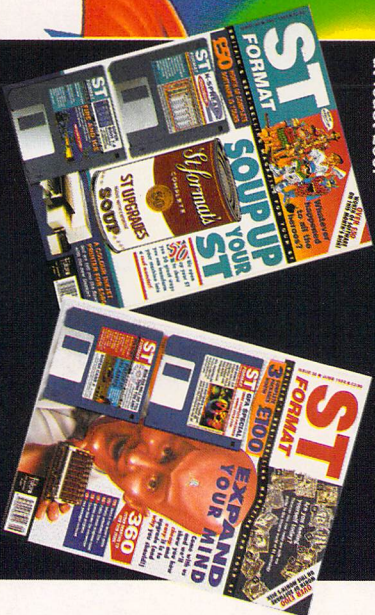
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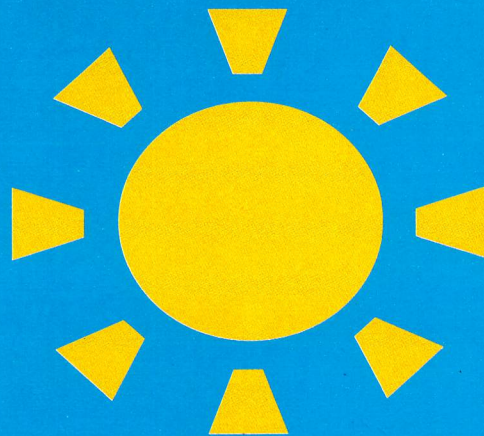
STMAG/08

**"If all the year were
playing holidays, to
sport would be as
tedious as to work."**

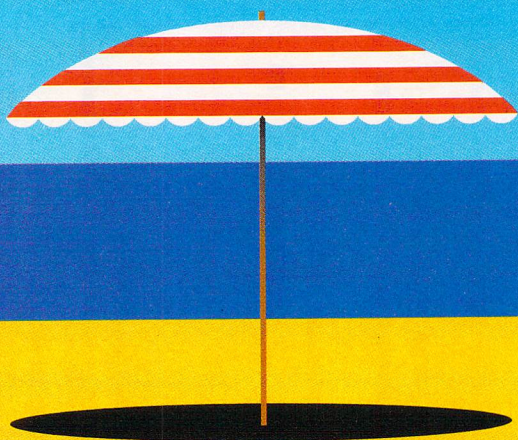
WILLIAM SHAKESPEARE

**"Put your car on
cruise and lay back
'cos it's the summer-
time. Summer,
summer, summer
time, it's the
summertime."**

DI JAZZY JEFF AND THE FRESH PRINCE



Find out exactly what both these bards meant in the next issue of *ST FORMAT*, when we detail 15 utterly brilliant reasons for you and your ST to neglect the garden, the kids, the test match, your visiting relatives and Champion the Wonder Horse repeats.

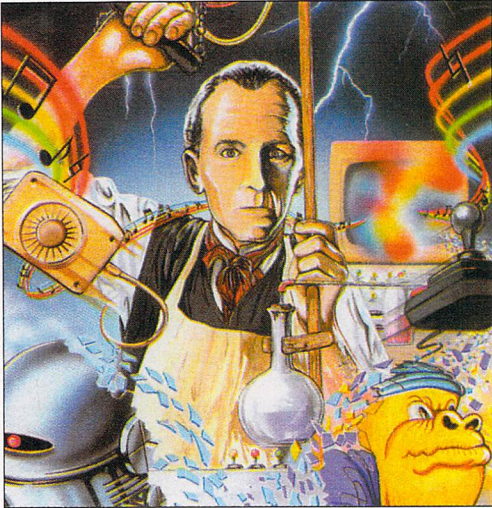


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STOS MANUAL



If you've been playing around with STOS from the Cover Disk you'll have discovered what a powerful program it is. Our guide on page 17 should get you going, but to fully exploit all the features of this excellent language you need a manual. The official STOS manual includes detailed descriptions of every command, together with example code and sample programs, and a walkthrough to get you used to the language. For just £11.99 you can be completely in control.

DESCRIPTION: STOS MANUAL
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and distort the sound, and even add special effects with the Phaser and Disco programs. Sounds can be easily replayed in STOS using the extra commands supplied.

The STOS Maestro Plus cartridge normally sells for £45.00. For the bargain price of just £19.99 you can have the cartridge and software, a comprehensive User Guide and a glossy wipe-clean Reference Card to all 350 STOS commands, with syntax and a brief explanation of each. But hurry – there are only 150 cartridges left. Order now!

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ANIMASTER v3.4

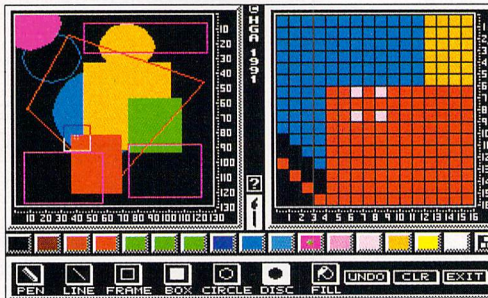
Played with Animaster on the Cover Disk yet? Good, isn't it? But the latest update, version 3.4, is even better. It offers all the goodies of the Cover Disk version, plus:

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- **Full manual on the disk.**
- **Improved copy and delete functions.**

NOTE: your machine must have 1MByte (or more) to use these extras.

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When you've decided which of these special offers you want, take a photocopy of this page – if you cut the coupon out, you'll destroy the PD pages – fill the relevant coupon in and post it to the correct address. Remember: if you want the

STOS manual or the sampling cartridge, post the top coupon to Trevor Witt, ST FORMAT, Future Publishing, Somerton, Somerset TA11 6TB. If you want the Animaster upgrade, send the lower coupon to: Barrie Capel, GFA User Group, 186 Holland Street, Crewe, Cheshire CW1 3SJ.

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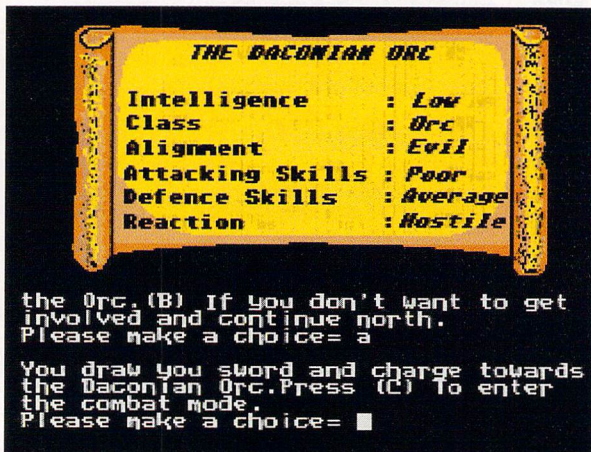
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Public Sector

GAMES

HAMMER TO FALL

Goodmans PDL – Disk GD 1554



● *Hammer to Fall* is a text adventure with our old friends orcs, magic and frequent death. It's a multiple choice affair rather like those adventure books with squillions of numbered paragraphs.

It's a familiar story – mother dies in childbirth, father abandons child to be brought up by evil orcs, child grows into a nasty piece of work and discovers magic powers, then sets out on quest to steal five sacred items to open the gates of Hell. *Hammer to Fall* is a text adventure in the classic mould. The adventure has none of that typing in commands stuff – you're presented with a selection of choices and you just enter the particular piece of lunacy you want to try. This limits the feeling of freedom, but makes playing the game a breeze. It does tend to be a bit hit and miss though, as you test which options don't involve a sudden death. Interesting diversion for adventure fans with typing phobias.

STF Rating: 73%

3D SOCCER

LAPD – Disk G 194



● It's a funny old game, isn't it? No, really it is – the sight of 22 funny haircuts in shorts trying to beat a leather ball into submission had us all in stitches. *3D Soccer* in action – notice the arrows pointing out the players with perms.

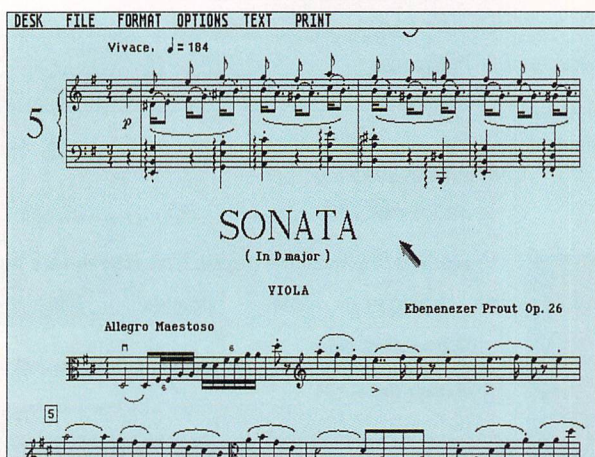
Away the sprites, it's your old favourite – a footy game. This one has a new angle, being three dimensional – well, it looks it, anyway. Two players frantically waggle joysticks trying to make the ball meet the opponent's net. It looks good, but the gameplay's a bit on the iffy side. Your players move slowly and it's a flip screen pitch rather than a scroller, making the whole event a tad pedestrian. Large arrows hover above the player you're controlling: he runs, he dribbles, he does sliding tackles, he makes a truly awful record and gets transferred to Italy and is never heard of again. A brave programming effort which isn't that bad for the odd kick about on a Sunday afternoon.

STF Rating: 72%

ART AND MUSIC

FINAL SCORE

Goodmans PDL – Disk GD 1555



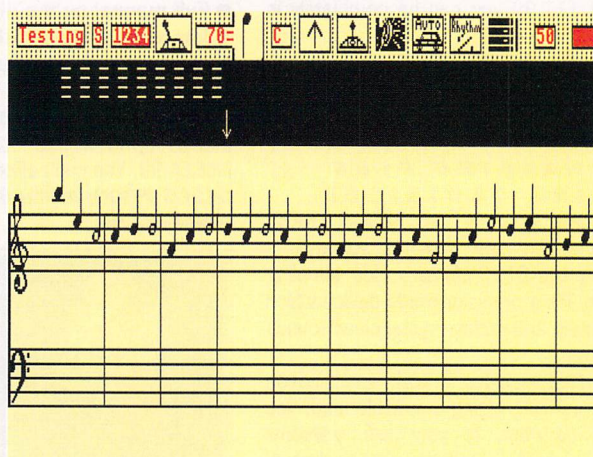
● These strange and ancient symbols represent music. From these a person called a "musician" can transpose them into music. (Taken from *Music: The Drummer's Guide* by J R Heartless. Thanks go to *Final Score* for the example manuscript.)

Just what you need – a fully "what-you-see-is-what-you-get" score writing program. That was what you wanted, wasn't it? This sort of thing can easily set you back many small bundles of thin oblong paper containing metal strips. *Final Score* produces *Degas* high resolution screens ready to import into DTP packages or you can print out the work onto an Epson compatible printer. There are five fonts with all the musical symbols you'd expect as well as plenty of block functions. You can also define your own symbols and do a spot of detailed work in zoom. It can't do anything fancy with MIDI files, but is an impressive piece of kit. Before parting with the aforesaid oblong notes, try it – it might be just what you need.

STF Rating: 85%

MUSIC TUTOR

Goodmans PDL – Disk GD 1557



● *Music Tutor* strutting its stuff – come along now, children, play along. Wonder how many people were put through torturous piano lessons as children, mentally scarring them for life?

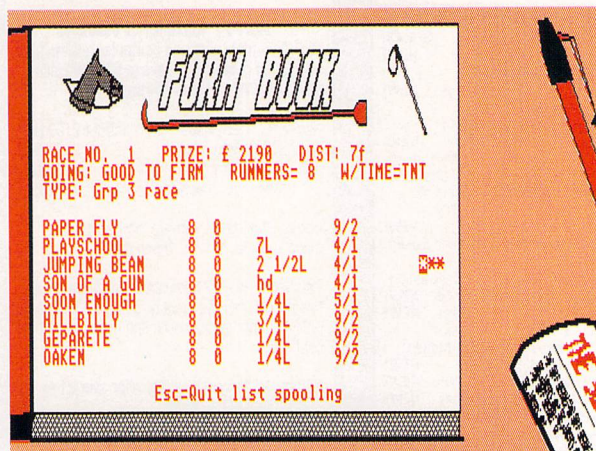
The technical side of music has got really jazzy in the last few years – MIDI sequencing, sampling and zillions of effects. One thing all this techieness doesn't do, however – as is patently obvious from the abundance of one-fingered synth efforts about – is give you the ability to actually learn to play something. *Music Tutor* is just that, a sight reading tutor. You can adjust the tempo, how many bars you have to practise and whether or not to use a metronome. *Music Tutor* can also check your performance and report on all your efforts. If you've got a MIDI keyboard and fancy doing a bit of sight reading, this could have you coming on in leaps and bounds – or have the neighbours coming round in leaps and bounds.

STF Rating: 75%

It's all relative, isn't it? I mean, take a look at your family. See? It all depends where the observer is in relation to the object. Public Domain disks, for example – from a long way away they look really small, but close up they're about three and a half inches across. Weird, eh? Chris Lloyd has no idea what time it is relative to where he is

HORSE RACING SIMULATOR

Budgie – Disk BU 89



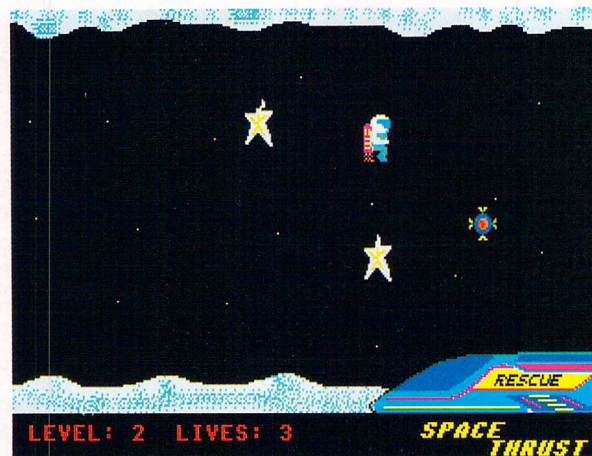
● Checking out a horse's form in *Horse Racing Simulator*. Just as we suspected – a short stretch for kiting and another for passing Jekyll Rolexes – a right south London villain. Luckily he can run fast, too.

We now head over to Ascot for an involved racing management sim that casts you as a horse owner, just like our under-paid, over-worked royals. There are techie details about each of the 200 horses in the stable – important things like stamina, speed and miles-per-gallon. You can buy and sell the nags, enter them in races and stand around racecourses making strange mystical symbols as well as transfer money in a race known as "bookies." If you're into management games and are bored with humans, then having a bash with our four-legged friends might keep you quiet for a while. To be frank, it's not really very exciting – action certainly isn't its middle name. Stats freaks only.

STF Rating: 64%

SPACE THRUST

LAPD – Disk L 9



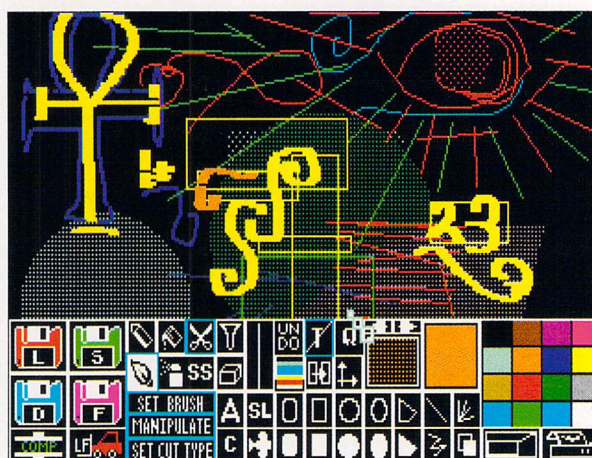
● *Space Thrust* – great title, lousy game. A few years ago on a lesser machine it might have been a blast. Not likely to light anyone's fire now.

With an exotic title like this, you might expect something a little bit on the zappy side, but *Space Thrust* isn't – it looks and plays like a bad Spectrum game circa 1906. You control a jetpack-riding spacer as he tries to prevent satellites dropping out of orbit and smashing into the ground. Position him over the offending article and you can direct it towards the satellite rescue area. If either of you should hit the ground, it's all over. It all sounds terribly fun especially when you consider that this is all that NASA's glorious astronauts have been up to for the last couple of years. However, it's actually simple and frustratingly unplayable – the graphics are pukey and sound is reminiscent of a dying blender. Yeuch.

STF Rating: 38%

ART WIZARD

LAPD – Disk A 53



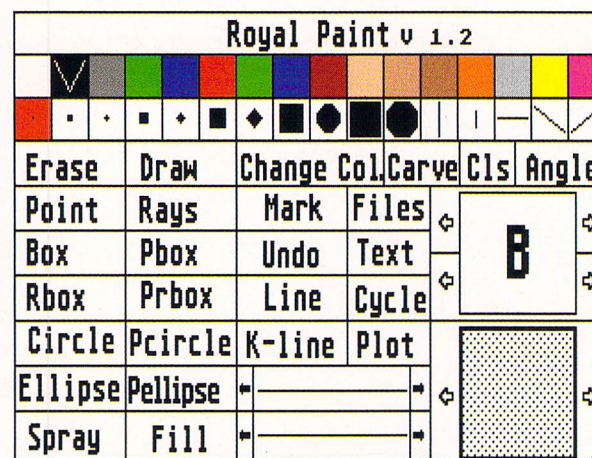
● *Art Wizard* – but magic it's not. *Art Wizard* is Shareware, so you need to register to get a version that can save any of your precious doodles.

It's an art package, it's written in STOS Basic and it's not complete load of dingo's kidneys – now, there is a surprise. It runs in all three ST screen resolutions and needs 1MByte to live in. All the familiar arty functions are on a strip of icons along the bottom of the screen – everything's easy and reasonably quick and there are even a few block distortion tools. There is plenty of stuff to define – fills, lines, spray-cans, block mode and all that jazz. It has its own fonts and can even output to printer. There are hordes of art numbers in the Public Domain and *Art Wizard* is an above average effort, but has nothing special to give it a real edge. Does anyone use STOS to write games with these days?

STF Rating: 67%

ROYAL PAINT

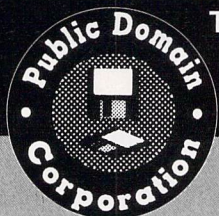
Riverdene PDL – Disk 987



● *Royal Paint's* main menu, with the usual merry band of graphic functions, including our old favourites the GEM poly-marks – gasp! Nothing to quicken the heart dangerously, though.

Yet another in a long, long line of Public Domain art programs and yet another in a long line of *Degas Elite*-alikes. *Royal Paint* has all the basic functions, but no lacy frilly bits at all. The block function is limited to a straight cut and paste affair. Flipping between the menu and the drawing screen is slow, although the drawing functions themselves are fairly nippy. Perhaps the single most glaring omission is the lack of a zoom function. This severely limits the program's usefulness and makes it pretty useless for serious graphics work. If you can't examine what you're doing up-close, then a whole array of graphic effects are out of the question. If this is royalty, then it's an extremely distant cousin.

STF Rating: 55%



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Calamus fonts 1197: Broadway Engraved, Mini 6, Horst Caps, Fancy Chancery, Micon (Demi, Demi italic, Bold Extended Italic, Bold Extended), Shalom Old Style, Shalom Script, Shalom Stick, Windsor.

1198/1199: Glip (Bold & Oblique - 3 variations, Roman), Lee Caps, Maths Symbols, Moskva, Zaleski Caps, Architect, A-Logo, Diane, Krazy Headline, Tiempo v2.1 (4 variations of Bold, Italic and Light), Premiere Light, Showboat **NEW!**

496 Calamus 1.09 demo (1DM) **NEW!**

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966 IMG Banners-fill in your own text (D)

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827 Pagestream font editor + fonts

872 Pagestream utilities

970 Easy Text v 1.2 desktop publisher

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EDUCATIONAL/KIDS

820 Algebra 1 & Verbal-Linear Problems

819 Basic Math Skills

64 Human Anatomy Tutor (C)

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DEMO 69: - Electra Reset Demo (1 meg)

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→ DEMOS

PANDEMONIUM DEMO

Prophecy PDL – Disk DEM 149

Megademo-city. Guide the sprite effort around a scrolling world to enter the sub-demos – yet again. Half a dozen or so beautiful-looking efforts, including a full screen wobbly raster “colourshock” thing and the obligatory scroller with such clever effects it’s incredibly hard to read. Everything is colourful and delightfully hand-crafted in the finest mahogany. In a world of mediocre megademos, this can stand proud as not being as mediocre as the rest by a longish shot.

STF Rating: 82%



● *Pandemonium* reigns – the best of a selection of demos is a wild ‘n’ woolly sampled affair with some lovely hypnotic and psychedelic flashing graphics. Quick! Pass the ginger beer – I’m starting to turn into an orange!

M DEMO 3

Prophecy PDL – Disk DEM 146

A serious selection of demoiness. The menu is a real piece of grunge metal with some throaty chap shouting about something or other – probably involves death, cars, satanism and his mother – it goes on for ages, too. Hit the Spacebar and the tempo changes completely to a dancey number. Plenty of crunchy samples and throbbing rhythms with the odd graphic thrown in. Bit ropery in places, but worth turning up the volume for a couple of times.

STF Rating: 76%



● One very happy and vaguely psychotic-looking gentleman enjoying a relaxing and therapeutic dance session at Mrs Turner’s dance emporium. The *M Demo 3* sampled mayhem strikes again.

NTM DEMO

Riverdene PDL – Disk 995 and 996

Two disks worth of demoiness. The menu is a complete shooter not a million miles away from *Goldrunner*. Guide the shrimp-mobile through waves of aliens to the sub demos. Great fun at first, but you need to persevere to see all the demos. The reward is another scrolling demo, or a sine waver with manic chip sounds. Some good real-time scaling and flash dot stuff raises things a bit. Was it worth it?

STF Rating: 74%



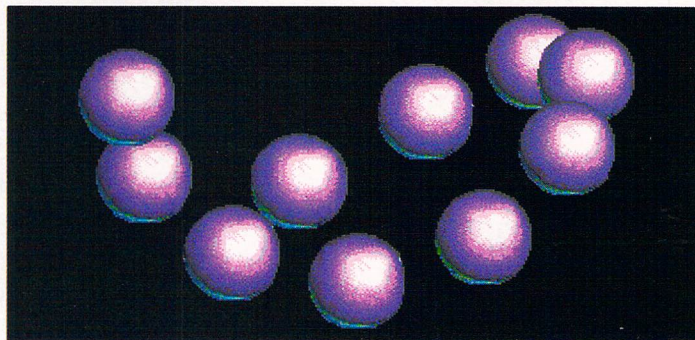
● The *NTM Demo*’s shoot-em-up menu: very smooth, very scrolly, very frustrating. My kingdom for a simple menu, clearly labelled one, two, three.

OXYGENE

Floppyshop ST – Disk DEM 3077

Megademo-city! Guide the sprite effort around a scrolling world to enter the sub-demos – but hold on a second, we’ve been here before, haven’t we? Interesting enough way of getting at demos the first few times, but now a definite drag. The sub-demos are the usual bag of scrollers, sprite-snakes, vector balls and that constant and maddening chip “music.” It’s all been done so many times before – and however good it looks, there’s a limit to interest. A bit dull really – attractive loading screen, though.

STF Rating: 61%



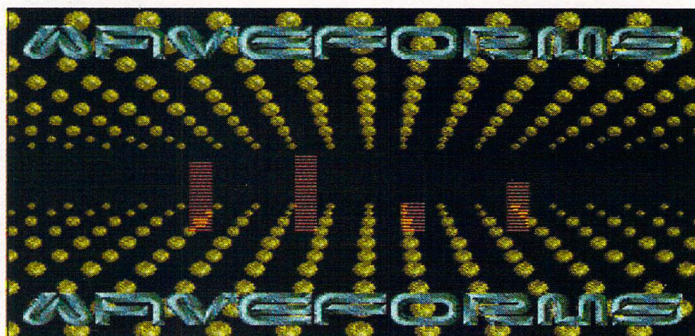
● It’s those balls again, whizzing around the screen without ever running into each other – amazing, eh? *Oxygene* is a classic megademo with little to distinguish it from the four squillion other classic megademos.

WAVEFORMS

LAPD – Disk S 83

A most smart loading screen leads to a menu of ten bits of sampled tracker business. Some groovy samples abound. So does some distinctly dodgy playing at times. It’s sort of interesting as you work your way through the samples watching the VU bars bounce up and down – well, once perhaps. Unless you’re a real fan of average techno-electro-house-garden shed music, the chances are you’re only going to get a few minutes of fun out of this. If you are a real fan – well, has anyone ever told you you’re a bit – er, not quite *normal*?

STF Rating – 60%

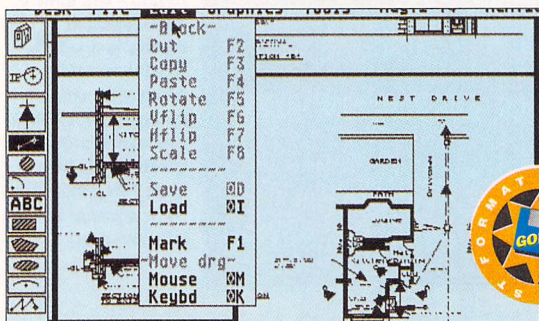


● Something to amuse the visual department while the speakers get a workout in *Waveforms*. Ten pieces of bleepy synthiness bleep at you, giving you the weird feeling you’ve heard it all before.

UTILITIES

MINI DRAFT

Platinum Disks - Disk ATA 111



● Auntie Doris's budgie cage extension in all its glory. *Mini Draft* is powerful, slick, fairly comprehensive and carries a slightly cheeky grin.



Quality gear, this one – a complete drafting package with an impressive range of functions. There are block numbers, cut and paste, load and save and all that, as well as libraries of symbols and primitives. You can zoom in and out of drawings at a fair pace – everything is written in assembly language. The maximum working area is 32,767 pixels square, so you can position elements with pixel accuracy. Functions are accessed through menus and icons as well as copious numbers of keyboard shortcuts. Many hours of devotion have been lavished on it and it shows – it's a rather smooth program all round.

STF Rating: 90%

ACCOUNTABILITY

PD ST - Disk GL 437

Desk	File	Select	Accounts	Transactions	Reports	Control
Nathanland Zero Option Account						
Date	Credit	Debit	Balance	Description	Code	
01/03/90			304.23	Brought Forward		
05/03/92	1024.15		1328.40	Salary QML	SALY	
05/03/92	50.00		1378.40	Ann Youwitty	LOAN	
05/03/92		45.23	1333.17	Gas bill	DGAS	
05/03/92		177.77	1155.40	Electricity bill	DELE	
06/03/92		4.50	1150.90	Haircut	PHAI	
06/03/92		77.00	1073.90	TU licence	DTVL	
10/03/92		21.99	1051.91	New paisley shirt	PCLO	

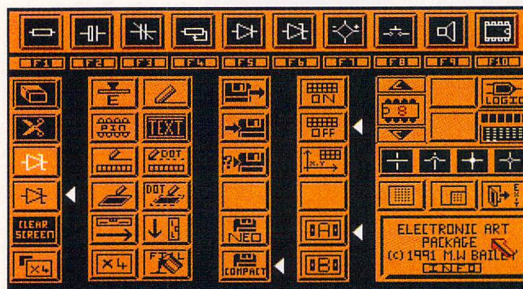
● One of those transactions from *Accountability* – it's got the date and description and everything. Quick! Duck round the corner and pretend you never saw it – perhaps it'll go away again. Can you lend us a tenner until Tuesday?

The clue to this one is in the title – yes, it's another accounts program designed to keep track of the embarrassing state of your financial affairs. You can have up to ten accounts, each holding 2,000 transactions. Everything is simple to use – the functions are all accessed from menus. Transactions can be sorted, repeated every period, grouped by type, printed out and analysed. There are even pie charts to bring the full terror home – just look at the size of that slice. *Accountability* is well-presented and easy to use. It doesn't pretend to be a small business package – just does a grand job of keeping your home accounts. If you want to change from the back-of-an-envelope school of accounting to a digital one, check this out.

STF Rating: 84%

ELECTRONIC ART

Goodmans PDL - Disk GD 1561



● The healthy-looking range of tools from *Electronic Art*. Just join the negative flux logic output to the rotary fusion unit and solder the little red wire to – er, the unused pin. Then call an electrician – best not to take any risks, eh?

A disk packed with goodies for those who brave the world of the soldering iron. Best of the bunch is *Electronic Art* – works just like an art program but specialises in circuit boards. Along with the arty draw and zoom stuff is a range of symbols which can be selected from the keyboard and snapped into place on the design. Once the warp drive oscillator design is complete, you can save or print it out ready for phase two. Also on the disk is a circuit routing program that joins up little pin things and another that deciphers those little bands of colour on resistors. All jolly useful stuff if – er, you're the type to find this sort of stuff jolly useful.

STF Rating: 75%

The **FORMAT** PD directory

● Where to go for Public Domain software – demos, games and utilities for around £3 a disk! If you write to any of these libraries for a catalogue, enclose an SAE. ● Budgie games are available from all PD libraries indicated by a (B). Simply mention the disk number (above the review) when you order the disk.

SOUTH OF ENGLAND

16/32 PDL, 35 Northcote Road, Strood, Kent ME2 2DH ☎ 0634 710788

Arrow PD, 6 Kents Orchard, Perry Street, South Chard, Somerset TA20 2QB

Atari Advantage, 56 Bath Road, Cheltenham GL53 7HJ ☎ 0242 224340

Awesomedemos, 3 Mason Road, Seaford, East Sussex BN25 3EE

B-Soft, 2 Oliver Drive, Calcot, Reading, Berks. RG3 5XN ☎ 0734 419981

Drake PD, 12C How Street, The Barbican, Plymouth Devon, PL4 0DA

EVPD, 15 Cleeve Road, Gotherington, Cheltenham, Glos. GL52 4EW

Freaks PDL, 29 Leap Valley Crescent, Downend, Bristol BS16 6TQ (B)

Gemini Shareware, 10 Warwick Avenue, Slough, Berks. SL2 1DX ☎ 0753 28183

Imageart, 19 Brenda Road, Tooting Bec, London SW17 7DD ☎ 081 767 4761

MT Software, Greensward House, The Broadway, Totland, Isle of Wight PO39 0BX ☎ 0983 756056 (B)

Merton PD, 10 Grasmere Avenue, Merton Park, London SW19 3DX

New Age PDL, 30 Anderson Estate, Lower Road, Hockley, Essex SS5 5NG ☎ 0702 232826 (B)

Paradise Computers, 11 Winfield Avenue, Patcham, Brighton, East Sussex BN1 8QH

PD Essentials, 22 Fern Avenue, Mitcham, Surrey CR4 1LS

PDS&C, 5 Walnut Close, Barkingside, Essex IG6 1HE ☎ 03548 448

ProBUS, Birch Hill, Sway, Lymington, Hampshire SO41 6BJ

Prophecy PD, 390 Coulsdon Road, Old Coulsdon, Surrey CR5 1EF ☎ 0737 554536

Public Dominator PD Atari, PO Box 801, Bishops Stortford, Herts. CM23 3TZ ☎ 0279 757692 (B)

Public Sector PDL, 50 Ripon Road, Stevenage, Herts. SG1 4NA ☎ 0438 364722 / 361324

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berks RG3 5AN ☎ 0734 452416 (B)

Senlac, 14 Oaklea Close, Old Roar Road, St Leonards On Sea, E.Sussex TN37 7HB ☎ 0424 753070

Seven Disk, Digswell Water Lodge, Digswell Lane, Welwyn Garden City, Herts AL7 1SN ☎ 0438 840456

Softville PD, Unit 5, Stratfield Park, Eletttra Avenue, Waterlooville, Hants PO7 7XN ☎ 0705 266509 (B)

Solent Software, 53 Rufus Gardens, Totton, Hants. SO4 3TA ☎ 0703 868882

South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD (B)

ST Adventurers PDL, 32 Merrivale Road, Risng Brook, Stafford, Staffs ST17 9EB

Warzone PDL, 53 Ropewalk, River Street, St Judes, Bristol BS2 9EG

Wizard PD, 178 Waverley Road, Reading, Berks, RG3 2PZ ☎ 0734 574685 (B)

NORTH OF ENGLAND

Alpha Computing, 32 Meadow Drive, Halifax, W Yorks HX3 5JZ

Akore Shareware, 7 Fishergate Point, Lower Parliament Street, Nottingham NG1 1GD ☎ 0800 252221

D W Stables, Unit 1, Johnson's Shopping Centre, 29-31 Bond Street, Blackpool FY4 1BQ ☎ 0253 404550

Goodman PDL, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffs ST3 1SW ☎ 0782 335650 (B)

LAPD, 80 Lee Lane, Langley, Hleanor, Derbys. DE7 7HN ☎ 0773 761944 (B)

Metropolis PD, 38 Howick Park Drive, Penwortham, Preston PR1 0LU ☎ 0772 748422

Nightshift PD, 50 Averil Road, Highfields, Stafford Staffs ST17 9XK

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PD ST Kier Bailey, 95 Elton Road, Sandbach, Cheshire CW11 9NF ☎ 0270 762520 (B)

Platinum Disks, 181 Anson Close, Padgate, Warrington, Cheshire WA2 0HJ ☎ 0925 820693

ST Club, 2 Broadway, Nottingham NG11 1PS ☎ 0602 410241 (B)

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The Source PD, 7 Shearwater Lane, Norton, Stockton-On-Tees, Cleveland TS20 1SH ☎ 0642 550896

Tower PD, PO Box 40, Thorton-Cleveleys, Blackpool FY5 3PH

TRUST PD, 18 The Park, Southowram, Halifax, HX3 9QY ☎ 0422 341606 (B)

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Office Choice, Suite 14, Avon House, Town Centre, Cumbernauld G67 1EJ (B)

State 808 PDL, 3A Old Lanark Road, Carlisle, Scotland ML8 4HW

WoolleySoft, Humblesknowe Cottage, Ramolys, Dunblane, Perthshire, Scotland FK15 0BA

WALES

Shoestring Software PDL, 78 Carmarthen Road, Swansea SA1 1HS

IRELAND

PD 4U, 4 Sintonville Avenue, Belfast BT5 5DG ☎ 0232 672338

OVERSEAS

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Atari ST User Group Norway, c/o SA Jensen, N-3630 Rodenberg, Norway

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LTPD, 37 Montye Ave, Box #2, Toronto, Ontario, M6S 2G8, Canada

Public Domain Corporation, 4320 – 196th SW, Suite B-140, Lynnwood, WA 98036-6721, USA ☎ 0101 206 745 5980 (catalogue £1)

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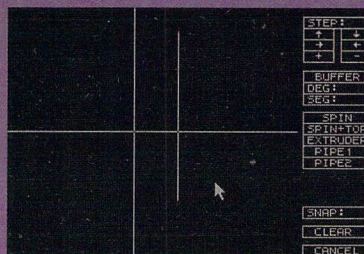


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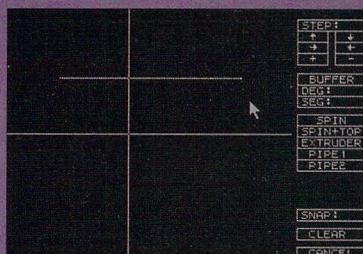
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CASES IN POINT

As usual, starting with simple scenes is a good place for getting the feel of the program – in this case, for instance, you could start off by modelling a “ground” with a couple of pillars positioned on it



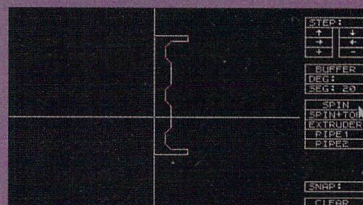
1 First we need to create the ground. This is just a flat square shape, made with the Extrude function. So load up the program and click on Create. Draw a single vertical line – it doesn't matter where, and it doesn't matter how long it is. If the line isn't vertical, drag the end points until it is.



2 Now click on Buffer. The line disappears and is stored in the buffer. Draw a horizontal line now – again, size and position don't matter.



3 Click on Extruder. You're taken to the object adjustment screen. Click on Plane and use the cursor keys to rotate the object – as you can see it's a flat squarish shape.



4 Click on OK and then on Rename from the main menu. Change the object's name from “1” to something like “Ground,” then click on OK.

Now the pillars. Click on Create again, then on Clear to get rid of the line that's on-screen. Draw an outline something like that in the screenshot – it doesn't have to be the same, any pillarish shape will do. Just make sure the outline doesn't extend into the left-hand area. Next click on Seg and enter 20, then <Return>. Finally click on Spin.

3D for free



You can never get too much of a good thing, and 3D modelling programs are good things. Thus it is that we present another fabulous object creation package. Ed Ricketts guides you through the dimensions

Those Northern chaps are clever coves, aren't they? In issue 34 we gave away *Volume*, a 3D modelling program from Sweden. (Of course, you'll want to turn immediately to page 40 if you didn't get that issue.) Now we've got the stunningly-named *3D Picture* from the Netherlands – an equally good, nay, even better 3D modeller. It's on the Cover Disk right now, ready and waiting for you to gawp at.

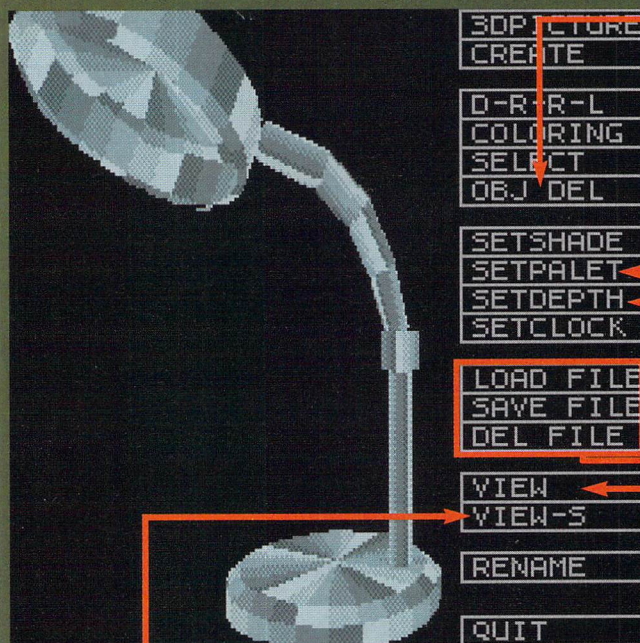
So what on earth is this 3D modelling supposed to be? Well, imagine being able to take a 2D shape – any shape – and then distort, alter and twist it into marvellous 3D objects; then colour those objects, place them in a scene and shade them. “Good grief,” I can sense you saying, “that's what I can do with *3D Picture*!” Yes, indeed – that and more.

Like *Volume*, *3DP* enables you to create objects in two or three basic ways. You begin to create the object by drawing an outline composed of points and connecting straight lines. You can then either spin it, extrude it, or – er, “pipe” it – that's the only description that fits. Then you can arrange these objects into some sort of scene, rotating, resizing or altering as you go, and finally see the entire tableau with shading and shadows in 64 colours (using dithering). This can be saved in *Degas* or *IMG* format.

The entire program is menu driven and creating objects is as simple as clicking and dragging a few points. If you want to be convinced of the program's power, have a look at the example screens on the Cover Disk. They've all been created with *3D Picture*. The object files are also on the Disk, so you can adjust, distort and reposition these to your heart's content.

So, you know what it can do, you can see how to do it and there's nothing now to stop you rendering away far into the night. *stf*

INTRODUCTION

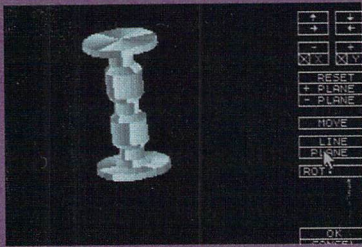


View-S is identical to **View**, but it also calculates each object's shadow. Obviously, with one object you don't see any shadows. Be warned: this process can take upwards of ten minutes, so it's best to leave this for the final rendering just before you save a picture.

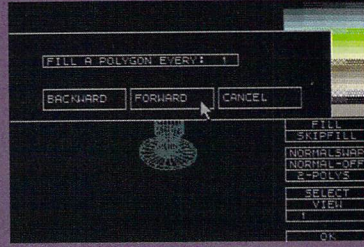
to see them filled, <F3> for filled and shaded (64 colours), and <F4> for filled-shaded (32 colours). The cursor, <Insert> and <Clr Home> keys rotate the object around the centre of the universe, as before.

On the numeric keypad, you can use keys 8 and 2 to zoom in and out, 4 and 6 to move left or right, and 7 and 9 to move up and down. Use <+> and <-> to change the step size for movement, <(> and <(<) to change the rotation angle, and <Help> to show all these settings.

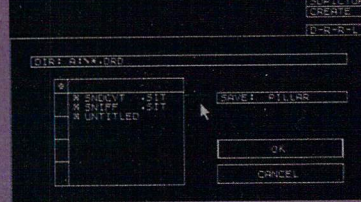
To save a picture in *Degas* format, press 1 (on the main keyboard), or 2 for *IMG* format. 5 and 6 swap between a 50 and 60Hz display (great if you've got a monitor), and <Esc> takes you back to the main menu.



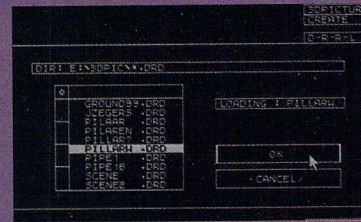
5 In the object adjustment screen, click on Plane to see the object better and look at it from all sides. If you don't like the shape, click on Cancel and alter the outline in the Create screen, then click on Spin again. When you're happy, click on OK. Rename the object from "2" to "Pillar."



6 Before you position the objects, you might want to recolour them. Click on Coloring, then on Select and choose Pillar. The Pillar should appear. How you colour it is up to you. The simplest way is to colour the whole pillar with the same shade. Choose a colour from the palette - if you don't fancy any of the colours, change them from the SetPalette menu - then click on Skipfill. Enter 1, press <Return>, and click on Forward.



Click on OK to get back to the main menu. Now you need to save the pillar to disk and then load it back in as another object - that's the only way that you can duplicate objects in 3D Picture. First, put a blank disk in drive A. Click on Save File and choose Pillar from the list. Click on OK and a fileselector box then appears. Make sure drive A is selected and type in a file name in the Save: box. Don't call it Pillar - make it something else such as Pillar2. Then click on OK. The file's then saved to disk.



8 Now reload the picture - just click on Load File, choose Pillar2 (or whatever) and then click on OK.

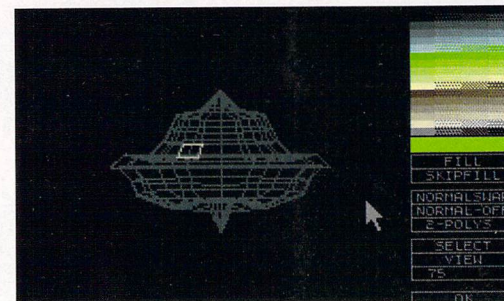
COLORATION

Colouring is the place where you can brighten up your objects. Although every object is assigned colours when it's first created, you may want to change these

- 1** To get something visible on-screen, click on Select and choose what you want to colour.
- 2** Next use the left and right cursor keys to move between each polygon on the object. The current polygon is highlighted and its number appears just under the View button.

3 For any polygon, you can choose a colour from the palette above and click on Fill to fill it with that colour. If you want to fill more than one polygon with that colour, click on Skipfill. Enter a number in the "Fill A Polygon Every:" box, then choose Backward or Forward. To fill every other polygon, enter 2. To fill one, then skip two, enter 3. This way you can create chequered objects, or quickly fill the entire object (with a setting of 1).

4 View gives you the chance to have a look at the object you've been creating. All you have to do is click on View, then press <F1> if you want to see the object in wire-frame, <F2> if you want to see it shaded, and <F3> or <F4> for various filled and shaded views.



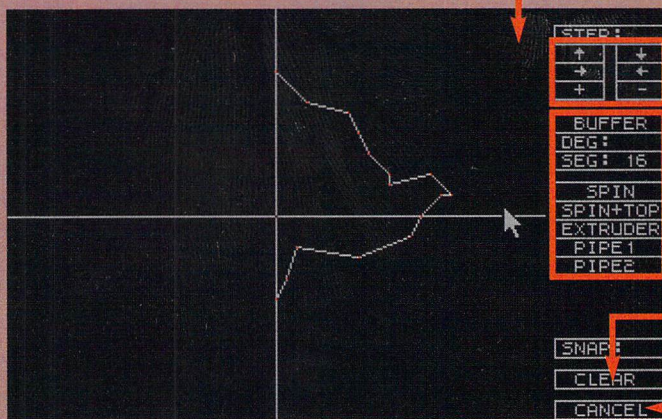
5 The Normalswap, Normal-On/Off and 2-Polys buttons aren't fully working yet. At least, we don't think they are.

CREATION

Objects start here at the Create screen. To the left is where you place points to make outlines, and to the right are the controls

Click anywhere here to place a point. If you've previously placed other points, the point is joined up to the one you last placed using a straight line. Points can be moved by clicking and dragging on them, and removed altogether by clicking on them with the right button.

All points obey the Snap command (lower right of the screen). Each point snaps to the nearest point within the value entered here, which makes joining up corners and suchlike easy. If you want to spin objects, draw on one side of the vertical line, because the object spins around this as the axis.



These arrows move the template in four ways, the + and - signs enlarge and reduce its size.

These are the major movers. When you've got a suitable outline, click on one of these. See the More Creation box below for more details on how they work.

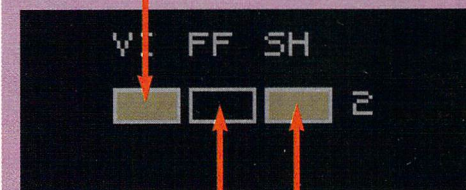
Click on this to get rid of everything on-screen.

Takes you back to the main menu screen.

SELECTION

Click on Select to choose which objects in memory you want to view. Each object has three boxes you can select

If this box is selected, the object is visible in the scene.



Select this box if the object should be drawn before other objects. This is useful for certain scenes where, for example, an object needs to appear in front of a floor. Set the floor to be drawn first and everything else appears on top of it.

Select this if you want the object to be shaded (provided there are lights and a shading view is on.)

MORE CREATION

Some experimentation is necessary if you want to use the creation tools properly. Even if you know what they're supposed to do, they tend not to behave exactly as they should

- 1** Spin takes the outline and spins it around the central axis by the number of degrees specified in the Deg box, and with the number of segments specified in the Seg box. Change these numbers by clicking on the boxes and typing in new ones.
- 2** Spin and Top is like Spin - it also spins around the central axis, but enables you to add a user-defined "top" to the object, so it's not open. When you click on the button, you're presented with another screen - move the

points and add others to form a shape. Then click on OK.

3 Extruder is the most complicated option. It takes one cross section and extrudes it along the length of another. First, define one shape. When it's ready, click on Buffer. The shape is stored in memory and disappears. (You can get it back at any time by clicking on Buffer again.) Now define another shape. Finally, click on Extruder. The second shape is now extruded along the outline of the first. So if you define a rectangle as the first shape and a circle

as the second, you end up with a cylinder. Give it a go and you'll get the hang of it - with any luck.

4 Pipe1 and Pipe2 work in wonderful but hard-to-explain ways. Define an outline and enter a number in the Seg box. Click on Pipe1 and the program makes a - well, a pipe, using your shape as a cross-section. The more segments you have, the smoother the shape turns out to be. Pipe2 does the same, but makes an almost flat shape. Try it, and it'll probably make sense.

IF YOU'VE GOT A BRAIN, YOU MUST HAVE A PC

NEXT ISSUE
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July 1992 • Issue 10

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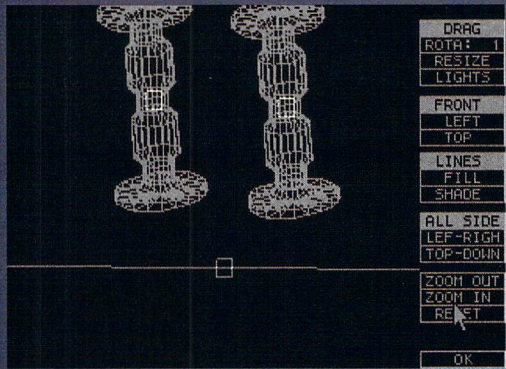
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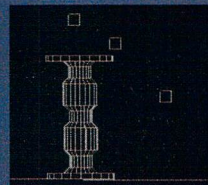
→ MORE CASES IN POINT



9 Click on D-R-R-L to arrange the objects. At first you can only see one pillar and the ground – this is because the pillars are in exactly the same place. Switch to Left view and drag one pillar away from the other.

Now arrange the ground so that it's horizontal. First resize it with the Resize command: drag the slider to 2, click on OK, click on

the ground and press the left button twice. Then in the Front view, click the Rota: box, enter 10, and press <Return>. Use the cursor keys and <Insert>/<Clr Home> to manoeuvre the ground so that it's perfectly flat. You may need to adjust the Rota: step to 1 for the final positioning.

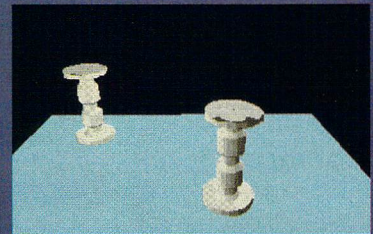


add some lights – turn on all six and position them around the scene.



11 Go to Set Shading and choose a range of colours appropriate to the colour of your objects.

10 Use the same techniques to position the pillars so they're standing on the ground. Then

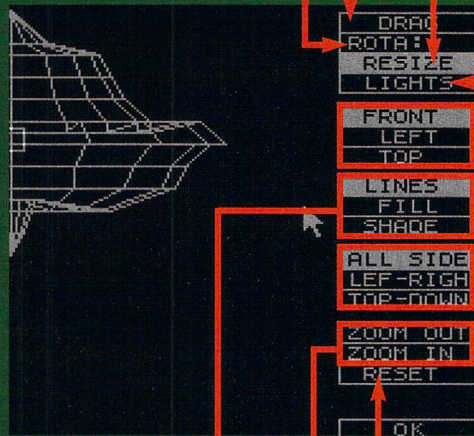


12 Finally, click on View, then hit <F3> to see the objects shaded in 64 colours. Use the cursor keys, <Insert>/<Clr Home>, and the keys on the keypad to arrange the view. If you want, you can use View-S to see the scene complete with shadows, but remember, this takes aeons to calculate. There are some far more impressive pictures and files on the Cover Disk. They may look complicated, but they've all been put together in the same way as this example.

PRESENTATION D-R-R-L: Drag, Rotate, Resize and Lights. Click on it to get here

To move an object, click on Drag and then drag the object by the box each object has on it.

Objects can be rotated in all axes with the Rota button. Click on it and enter the number of degrees you want to rotate the object by on each step. Then, to actually rotate, click on an object and use the cursor keys and <Insert>/<Clr Home> keys.



Lines shows the objects as hollow wire-frames. Fill shows them as filled objects. Shade fills them and also shades them, taking into account the position of the lights.

Self-explanatory.

To resize an object, choose Resize. In the dialog box which appears, choose which dimensions (X, Y and Z) you want to resize in and drag the slider to set the ratio of scaling, from 1 to 2 (twice/half original size). Then click the left mouse button on an object to increase its size and on the right button to decrease it.

Click on Lights to get the lights menu (obvious, really). Choose which lights to activate by clicking on the Lamp buttons, then click on OK. You can then move the lights by dragging their squares. You can't change their intensity.

These buttons enable you to see the scene from the front, left side or top. Changing views is useful if you want to position objects and lamps.

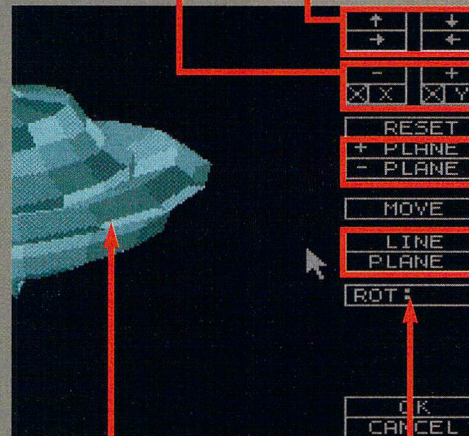
All Side enables you to freely move objects and lights in every axis. Left-Right restricts movement to the left-right plane, and Top-Down restricts movement up and down.

Resets all parameters to the way they were when you entered the screen.

DISTORTION You can move, stretch, resize, rotate and mangle all your objects from here

The arrows move the object as in the outline screen.

Clicking on these reduces or increases the object's size. Deselect the X or Y box and you can change the dimension in one plane only, enabling you to shear and distort the object.



Points and planes can also be moved. Select points on the object by clicking on them – again, they're numbered as you select them. Then click on Move and the crosshair appears. Click where you want the points to move – and they do, distorting the shape as they go.

Click on + Plane and a crosshair appears. Using this, select four points (they're numbered 1 to 4) and a new plane is created between them. The same applies to - Plane, except that this deletes a plane.

Click on Line to see the object as a wire-frame, or Plane to see it filled.

Rot changes the amount of rotation for each step. Click on it and enter a new number to change the step size.

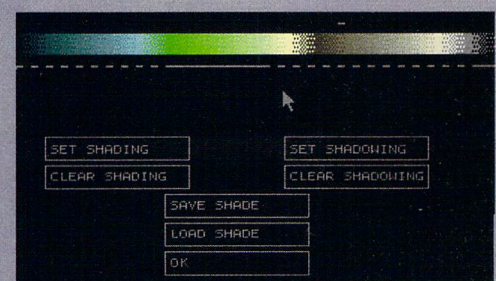
GRADATION

If you want to take advantage of any of the lighting effects, you need to have your objects shaded. And in order to have your objects shaded, you really need to specify which colours to shade them with. That's what the Set Shading menu is for. The settings you make here are universal – all the objects use these colours.

Setting a range for shading is very straightforward. Click on Set Shading, then on a start colour

and on an end colour. The dashed line that is positioned below the colour range should disappear. You are able to select multiple ranges if your objects are different colours by simply repeating the process. If you click on Clear Shading, all the shading ranges are removed.

If you want to specify the colours that should be used for shadows, click on Set Shadowing. Then you should click on one of the colours that are on the bar – a line then appears above it. All the colours which are at the left of the line are then used for shadowing.



ST answers

"Winchester flange clip vibrating badly? Unsightly body hair? Ah yes, you'll be needing our men in white coats. Step this way. Madam, sir."

SO, WHAT DOES IT ALL MEAN THEN?



BEGINNERS: If you're not sure where to put the three-pronged plug, you're probably a beginner. Look for this rather fetching icon.



COMMS: Y-Modem when you can Kermit? No, oh well. All your communications problems answered where you see this.



DISKS: Then, just when you think your backup disk will save the day, you find that it's corrupted. If you've lost your thesis, look for this icon.



GAMES: Can't find the Imperial Resonance Command Centre in *Epic*? Turn left at the Maharaja Curry House. Similar probs solved where you see this icon.



GRAPHICS: If your Turner's gone all Mondrian you've probably forgotten to turn off the back grid. Similar bizarre arty questions answered at this icon.



HARD DRIVES: If you've already managed to fill your 150MByte drive you probably left it in reverse. Or something. Hard drive probs answered here.



PRINTERS: I could never get the paper to sit properly on the side sprockets, but then my vicar said I'd come to no good. Hardcopy hassles sorted here.



PROGRAMMING: If the sight of an embedded loop has you running for a nice Barbara Cookson, seek out this icon and retire your library card.



SOUND: Here at *STF* we're velocity sensitive and completely quantized. Frazzled wannabe Vince Clarkes look for this icon.



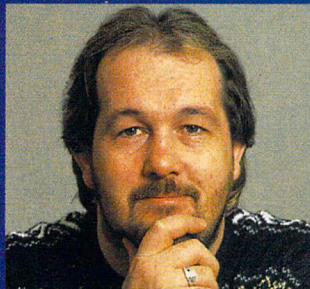
ST PROBLEMS: Maybe it wasn't such a good idea to spray that WD-40 into the disk drive. Owners of dead STs search out this icon and squeak no more.

MEET STF's PANEL OF EXPERTS



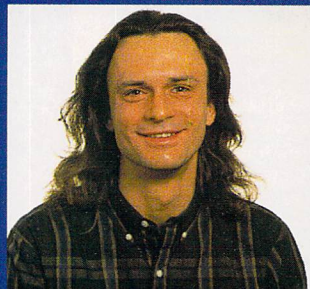
ASA BURROWS

Our resident *STOS* expert has promised to buy a new tie with the proceeds from his latest book, *Eating out for under £90*.



BARRIE CAPEL

Our Bazza knows more about *GFA Basic* than anyone, including Gorden Ferny Arbuthnot, the chap who invented the language.



CHRIS LLOYD

Lover, fighter and Timotei model. Chris likes Sushi, and her sister Darlene. He hopes to bring about world peace before next Tuesday.



CLIVE PARKER

He lives, he breathes and he even gasps occasionally. He also knows all about the insides of STs. So mock him not!



EDWARD RICKETTS

The son of an immigrant stoat farmer, Ed eats only once a day (on Ryvita) and knows lots and lots about games.



TONY WAGSTAFF

Leading light of the Bootle and Northern Area Assembly Coding Harmony Group. Makes a mean cup of Bovril. Allegedly.

FRUSTRATED GAMER



When I use my joystick in the right-hand socket the <Fire> button and the direction movement don't work. It works fine in the mouse socket for two-player games.

Anthony Perry, London SE22

stf: The internal solder connections to the joystick port may have broken because of the constant plugging-in and unplugging of the joystick. Call our *ST FORMAT Soup Up and repair service* on ☎ 0480 890787 and give them the details of your problem. They'll quote you a price for the repair.

FILE PROBLEMS



How on earth do I get a file out of a folder?

Daryl Lay, Suffolk

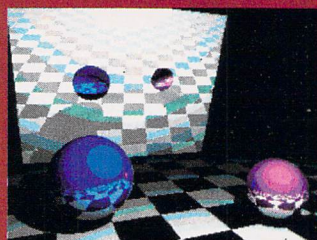
stf: We assume that you are using a one floppy drive system. Double-click on the Drive A icon so that a window opens showing the contents of the disk in the drive. Now double-click on the Drive A icon again to open another window showing the same disk. It is best if you display the files as Text by selecting the Show as Text option from the View menu. Re-size the windows into two columns and in one of them open the folder you wish to move the file from. Click on the file you wish to move and keep the mouse button held down. Drag the file across into the



Some quick tips

Last month *STF* brought the world *GFA Ray-trace* on the now legendary Cover Disk 36. Chris Lloyd has been up in the west tower at midnight during a thunderstorm doing a spot of experimenting.

A DIFFERENT PERSPECTIVE



● The classic raytraced world – play with the positions of the lamps and the observer to add interest. Notice the ground is set at an angle.

One of the golden rules of outdoor photography is to keep the sun at your back, but if you want more interesting raytraced pictures try experimenting with other positions. Put the main light off to one side of centre and offset the observer in the other. Lower the lamp to exaggerate shadows. A slight shift to the side with the horizontal view angle also adds interest to the checkered ground – the lines don't run in a straight line towards the observer. The closer the observer to the checkered ground, the more severe the perspective, at the loss of some detail. There are millions of factors to play with – the best way to learn is to start with simple shapes and fiddle with the relationships between the

other window, ensuring that you don't place it over a folder, and then the release the mouse button. The file is now copied to the root directory of the disk.

Instead of opening two windows, you could drag the file to the Drive A icon, which has the same result. If you have an STE or an older machine with TOS 1.4 you can move the file rather than copy it by pressing the <Control> key while you drag the file within a window. See ST Answers in STF 35 for details of copying files to a separate disk on a one-drive system.

BADGED MACHINE



I have upgraded my STE to 2MBytes of memory. Where can I get a "2080 STE" badge to replace my 1040 STE badge? I called Atari but they could not help.

Terry Holt, Hants

stf: Unfortunately Atari never produced any STEs with more than 1MByte of RAM, so the badges for a 2080 STE and a 4160 STE were never produced. Silica Systems (☎ 081 309 1111) can provide replacement badges for old machines – call them for details of availability.

MEMORY SPEED



Martin Walsh of Marpet Developments has written in to clarify a point in our memory upgrade feature in STF 35. We stated that the faster the speed of



Printer problems practically paraded

DOESN'T TALLY UP

I have been given a second hand Mannesman Tally printer. I have no instruction manual. Could you tell me which printer it is compatible with? I am using the word processor Write On which you gave away on Cover Disk 33.

Paul Allison, Berkshire

Try Silica Systems (☎ 081 309 1111) for a manual for your printer – they are official Mannesman Tally distributors. Alternatively contact Mannesman Tally on ☎ 0734 788711. Be sure to let them know the model number of your printer. If you are setting up your printer for use with Write On, try installing the program using the Epson FX drivers. In 99% of cases the Epson drivers do the trick. If the Epson driver doesn't work, then try installing some of

the other 9-pin printer drivers. Trial and error is your best bet – at least until you get a manual.

PRINTER NOVICE

I have been given an Epson LX-800 with no manual and I have no idea how to use it. What are all the buttons on the front for, and what do I do with all the switches on the back? Where can I get some instructions and a tractor feed from?

Paul Hamblin, Birmingham

You need to contact Epson on ☎ 0442 61144. They can provide the instructions and the information on the tractor feed that you need.

the SIMMs boards you used, the better. In fact all ST and STE memory runs at a speed of 150ns on machines with under 2MBytes of RAM and at 120ns on machines with over 2MBytes of RAM installed.

CLEANING WOMAN!



Is it necessary to clean the heads of my floppy drives regularly by using a head cleaning disk?

W Hart, Mid-Glamorgan

stf: Opinion varies on this subject. The manufacturers of the cleaning disks recommend that

you use them on a regular basis (well, they would, etc etc), but we were unable to find anyone who has actually used the things. If you have no problems with your drives then there is no need to introduce any foreign materials into the drives.

EXTERNAL DRIVE A FOR STM REQUIRED



I have an old 520 STM which uses two external drives. Where can I get a new external drive with a through-port to act as Drive A? My old Atari drive is dead

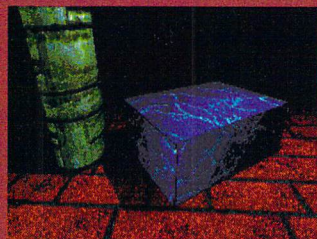
for better Raytracing

lights, the object and the viewing position. To speed things up you can opt to raytrace images at smaller size to get an idea of what's going on before you go for the full screen and long teabreak.

ADDING TEXTURE



● The woodgrain pattern was first drawn in an art package, then mapped on to the rectangle used as the ground. A mirror percentage adds a polished look.



● Texture mapping in all its glory. The textures are three separate pictures created with an art package and imported into Raytrace.

The checkered ground looks good, but after you've seen a few dozen it starts to look hackneyed. GFA Raytrace can load in Degas or Neochrome low resolution pictures and use them as the ground or sky and even apply them to objects. It's best to use simple, well-defined pictures with a minimum of colours to avoid glitches when rendering. Maps that are a

close-up of a texture should use small or medium ground size. Since ground maps are laid side by side to produce a continuous surface you need to make sure everything lines up on the screen edges. Try cutting out the edge as a block and moving it across to the opposite side to check how it all matches up. The better the picture used for textures, the better the final raytracing.

THE FULL SPECTRUM



● GFA Raytrace shows off again. This picture was then exported into Spectrum 512 and the colours smoothed out and the text reworked.

The main disadvantage when you're trying to produce really polished images is the inability to pixel edit them, as you can in a standard art package. GFA Raytrace uses a complex file format that can use all 512 colours of the standard STFM's palette. This makes for brilliant, vibrant pictures but makes editing the pictures tricky. The solution is to use Spectrum 512, which also uses the full whack. It's £35.19 from Silica Systems ☎ 081 309 1111.

On last month's Cover Disk we brought you the program SUL2SPU.PRg, which can convert your raytraced masterpieces into Spectrum 512 pictures. It's Shareware and if you register your copy you receive

a version that enables you load your picture straight into Spectrum without hassle, since it doesn't use colour register 15. You can now edit to your heart's content. Remove any of those annoying glitches and add anything you like – mix raytraced and digitised images, whatever. One of the first things to try is the anti-alias and blur functions. These smooth out transitions between colours by adding intermediate ones. Try working on small areas and keeping the anti-aliasing breadth setting small so as to avoid blurring out the detail. A little bit of retouching can greatly improve on the original "raw" raytraced image.

START ME UP

The file STARTSCR.SYS is a picture which is displayed when you first load up GFA Raytrace. If you fancy something different just rename one of your own creations and it gets loaded up instead.

COLOUR ME UP

The bands of colour you often see on raytraced balls are known as the "Mach band effect" – a common problem with raytraced programs, most noticeable on dull items. If you avoid primary colours there are more colour transitions – try adding a touch of other colours to an object. The placement of lamps is also important: if the lamp is too far away or too close then you don't see all the transitions. Bright objects are a different matter – the bands are tightly packed around the edge of the sphere and less noticeable. The "Spot" function adds the bright spot highlighting objects. The "Smear" function can ease the bands of colour a little – it smudges everything. Try it.

and all the adverts for external drives all seem to function as Drive B, without a through-port.

Jon-Scott A Allen, Caithness

I have a 520 ST with external drives A and B. The problem is that my old Atari drive no longer works and I cannot get a replacement mechanism for it. While your magazine is very good with regard to upgrading internal drives, you have never mentioned the problem I am having. Do you have any suggestions?

Barry Aldous, Suffolk

stf: Ladbroke Computing Ltd can supply the Golden Image 3.5 inch Floppy Disk Drive for £69.99. The drive includes a throughport and digital track counter. Phone Ladbroke on ☎ 0772 203166.

COME BLOW YOUR HORN



Is it still possible to obtain the Casio Digital Horn and can it be connected to the STE?

A Harland, N Humberside

stf: The Casio Digital Horn is a MIDI controller operated by lip pressure – it resembles a miniature sax, but is made of silver-coloured plastic. This is no longer manufactured, so your best bet is to look in music magazines or to telephone music shops to see if they have any left in stock. It connects to the MIDI In port of any of the ST range and can be used to input MIDI information to any ST sequencer in the same way as a keyboard is normally used.

CAN'T HEAR FOR THE NOISE



When using Sequencer One given away on STF Cover Disk 30, I get so much distortion that I am unable to hear the music. My friend has the same prob-



STOS Surgery

STOS is yours, complete, with this issue of STF, and this is the place to write with your queries. Here's another batch answered by Asa Burrows

SAMPLE THIS

Please could you tell me if there is any way I can play samples in STOS Basic programs? The sampler I use saves samples with the .SAM file extension.

Andrew Lear, Cheshire

stf: If you have a sampler and you wish to play samples back within a STOS program you should check the sampler's manual thoroughly or check if there is a document file on the disk with the word STOS as part of the filename. Most samplers are provided with playback routines for all the popular programming languages, including STOS. You do not indicate which sampler you have, although both the Mastersound and the STOS Maestro samplers save files with the .SAM extension. On Cover Disk 29 we included the Sconvert program, which can convert sound samples between different formats.

READERS' TIPS

SPECTRE TIP

M Laurretta from London N7 has sent in details of converting ST-generated MacPaint files for use with the Spectre GCR Mac emulator or on a Mac.

For some reason files saved in MacPaint format from an ST package do not work on the Mac emulator, but there is a way around this.

- 1 Save your pictures in IMG format onto a PC disk.
- 2 Use the Graphic Workshop Shareware program on a PC or a PC emulator to convert the file to MacPaint format and resave to the floppy.
- 3 Use the Transverter program supplied with Spectre GCR to copy the file to an MFS format Spectre disk.
- 4 When the disk is used in Spectre or on a Mac it now has the correct icon and works perfectly.

lem. Is the Disk faulty or are we missing something?

L Black, Edmonton, London
and **R Hammond, Walsall, West Midlands**

stf: I assume that you are talking about the playback quality of the .IFF samples which you load into the palette. The result is rather noisy – the answer is to upgrade to Sequencer One Plus (Gajits ☎ 061 236 2515) on which this particular feature has been greatly improved.

COST OF COMMS



How much does it cost to run a modem? Is it the same rates as a normal telephone call? Is it cheaper after 6pm and at weekends?

Daryl Lay, Suffolk

stf: Once you have paid for the modem and your comms software, all further charges are made at BT's normal rates because the modem

is plugged into a standard telephone socket. Some services such as CIX and CompuServe, however, charge you for time on-line to the service, and payment is usually made quarterly for actual time on-line plus a standing charge.



SCROLL ON

When I "show" a document from the Desktop in either medium or low resolution I seem to lose lines of text when I scroll the screen. I have a 520 STE.

Kevin Garrad, Avon

stf: This problem occurs on the STE or on machines with TOS 1.4 if the screen is scrolled by pressing the left mouse button. This scrolls the screen up by 27 lines instead of 25 lines. If you press <Space> to scroll the screen it performs the scroll correctly.

WEIRD TRIP



I have been told about a program called Trip-a-Tron by a friend, who said it was a light synthesizer. What does this mean and where can I get it from?

C Gasper, Ewhurst

stf: Trip-a-Tron is another masterpiece from Jeff Minter, he of Llamatron fame (STF Cover Disk 24), not to mention Revenge of the Mutant Camels (Cover Disk 31). The program is designed to produce a "light show" on-screen, the visual equivalent of a piece of music. It consists of a suite of subprograms enabling you to set up sequences of events, program different parameters to produce effects of your own designs, trigger events from a MIDI keyboard and a video sequencer, giving you control over the screen and enabling you to perform all sorts of TV style special effects. The more advanced features need 1MByte of RAM, although the

PLEASE DELETE ME

How can I delete a command or an entire line within STOS? When I have finished writing a game I always find I have made a mistake with some lines.

Darren Vine, Devon

stf: If you wish to delete a command from within a line all you have to do is LIST the line in question, like this:

LIST 20 <ENTER>

Now by using the cursor keys move the flashing cursor over the command and press the <Delete> key to delete each character of the word. Then press <Enter> to register the line.

If you wish to remove a line from a program then simply type in the number of the line you wish to delete and then press the <Enter> key:

20 <ENTER>

TRAPPED

I've tried using the TRAP #6 floating point extension library to create moving images of fractals, but I don't know whether the descriptions in the manual are relevant to this latest version of STOS 1.62. Mandarin

couldn't tell me and even though I seem to have got TRAP #6 working – not crashing – I don't understand the result I am getting because it seems to be in some special format.

Simon Alexander, Brixton

stf: The manual is not relevant to STOS 1.62 – nor to any version of STOS because the TRAP #6 and TRAP #4 routines were removed before STOS was released because they slowed STOS down.

MEMORY

Is there any way I can reserve more memory for the sprite bank (1)? I am writing a game with a great deal of animation and cannot define enough animation frames with the standard bank size. The program only allows me 66 frames of 32x32 pixels or 17 frames of 64x64 pixels. All frames must be available at once without loading and saving memory banks.

Lee Davison, Essex

stf: You are probably going to be unable to have that many animation frames, although you

basic program runs on a bog-standard 520 ST. Trip-a-Tron costs £34.95 from Llamasoft ☎ 0734 814478.

MOVIE MOGUL IN WAITING



I am interested in producing amateur video films and I need a decent video titling program and a text scroll program. Do you know where I could get them from?

Fred Olen Grey, Hammersmith

stf: In STF 35 we reviewed Video Titler ST v2 (£34.95) from Laser Distribution and awarded it a rating of 79%. Contact Laser on ☎ 0579 82426 for details. Alternatively you could try the Video Master disk from Budgie Productivity Software. It is available on disk GPR020 from Goodmans International and will set you back £3.95. Call Goodmans on ☎ 0782 335650.

MONITOR MAYHEM



I have an opportunity to purchase a Fujitsu M3 503B monitor. Can I use it with my STE? If so where can I purchase a cable?

Jim Rodger, Stowmarket

stf: Without more details of the monitor we cannot give precise details on connection. If the monitor is an RGB type then it may work with your machine. Generally PC monitors cannot be used with an ST or STE without internal modifications to the monitor. There are hundreds of different brands of PC monitor available, and each one is likely to require different modifications. That said, any competent TV service engineer should be able to connect the two. Contact Meedmore (☎ 051 5212202) and give them full details of your monitor – they are lead specialists and should be able to offer you a solution.

could try this: load your sprites and then save them using the BSAVE command. Clear memory and then reserve a bank with the amount of memory you require for the sprite file. Then try loading the sprite bank into it using the BLOAD command.

STOS NOVICE

In STF 32 you gave a STOS extension free on the Cover Disk and the instructions in the magazine said that you have to put the files into the compiler folder, but I have only got STOS, ORBIT and ZOLTAR folders. What do I do and what does STOS stand for anyhow?

John Dunsmore, Ayrshire

stf: When you are installing a STOS extension the files you need to copy onto your disks are either FILENAME.EX? or FILENAME.EC? The questionmarks can be any legal character. Where you have an .EX file this has to be put into the STOS folder on the language disk, while .EC files have to be put into the COMPILER folder on the compiler disk. If you don't have the STOS Compiler then you don't have to worry



Delve into disk data

IS IT SAFE?

I have an STE with an external floppy drive. Both my drives can format to 84 tracks and 11 sectors, not just the normal 80 tracks and 9 sectors. How far is it safe to format a disk?

W Hart, Mid-Glamorgan

Usually a disk should not be formatted beyond 80 tracks and 10 sectors because a normal double density disk is only designed to accommodate these parameters. However most good branded disks can happily format to 82 tracks and 10 sectors. To format a disk beyond these levels is risking data loss or corruption.

DATA DILEMMA

When I try to copy files or make backup disks I am often presented with the message "Data on disk A may be dam-

aged. You must use the right kind of floppy disk or connect your hard disk correctly." What is going wrong? I don't have a hard drive with my ST.

Simon Mower, Norfolk

Do you have problems loading your games? If you don't then this message usually means that the floppy disk you are trying to copy has become corrupted in some way, but there is a chance that there may be a problem with your disk drive itself. Try formatting a new branded blank disk (in other words, not a cheap one – cheapies often prove to be a false economy for this very reason). If it formats without any problem then your drive is probably okay. If you do get the message while formatting then your drive may be at fault. Call the ST FORMAT Soup Up and repair service on ☎ 0480 890787 and they will quote you a price for the repair. Remember though that you cannot copy commercial games disks – they give this error if you try.

WHICH IS BETTER?



Which is the better printer, Canon's BJ-10ex or the new Star SJ-48? The prices are similar but what about the output?

Niall Moran, Argyll

stf: Both the Star and the Canon printers use the same mechanism, so the output is virtually identical. Both printers can be obtained from We Serve (☎ 0705 325354) by mail order, the Star SJ-48 for £229.00 and the Canon BJ-10ex for £235.00. Both printers are supplied with cable and paper included.

SPLIT PERSONALITY



I have bought a lead to connect my Hewlett Packard colour monitor to my STFM. All the colours are okay in both medium and low resolution but the

icons appear down the middle of the screen and the picture runs off the right-hand side of the screen and reappears on the left-hand side. Does this mean I cannot use this monitor?

Frank Cullen, Sussex

stf: It sounds as though the horizontal sync needs adjusting – that is if it is connected at all! Lug the monitor and your ST to a TV repair shop and they should be able to sort it out for you.

TOS UPGRADE WANTED



I have a 1040 STE. Is there any chance of obtaining the new Mega STE TOS for my machine?

Carl Brown, Suffolk

stf: A switchable TOS 2.06 upgrade is available

about the .EC file. Simply copy the .EX file into the STOS folder on your language disk.

Sometimes there may only be an .EX file supplied with a STOS extension. In this case you need only copy it into the STOS folder. In these cases, you will be unable to compile any programs which use the new extension. STOS stands for ST Operating System.

NON-COMPATIBILITY

I have STOS v2.5 which I use with a Mega ST. The programs I create with it do not seem to be STE compatible. What can I do to rectify this?

Tim Putnam, Dorset

stf: Your problem is simply that STOS 2.5 is not compatible with the STE version of the ST operating system, TOS 1.62. There is a conversion program available for £2.75 from Goodman International Shareware (☎ 0782 335650) on disk GD489 – but the complete latest version, v2.6, is yours with this issue of STF anyway! Also included on our Disk is a handy little program called CONVERT.BAS, for converting your

programs from early versions of STOS to version 2.6.

ANOTHER OLD VERSION

STOS loads fine on my 520STFM upgraded to 1MByte of RAM but not on my friend's STE 520 – it bombs out on loading. I am using STOS version 1.03. I also have the STOS Game Maker's Manual, and on page 21 there is a Sprite Experimenter program. I have typed in the listing only to find that when I run it there is a movement declaration error in line 70. Could you please help? I have written to the author of the book and received no reply.

J Goodman, Plymouth

stf: You are unable to use your version of STOS on your friend's machine because you have an old version of the program. You can solve the problem by using version 2.6, the version that's yours with this issue of STF. The sprite program does work, but you need to type in the parameters for horizontal and vertical movement in exactly the same way as you would for using the MOVE command in a program.

from our "Soup Up your ST" offer for £65 including installation, when you have your ST serviced by us. The TOS upgrade we supply is the only one using official UK ROM chips supplied by Atari, and the switchable STE upgrade is the only one available anywhere. All other STE upgrades are straight ROM chip replacements. See last issue or phone ☎ 0480 891171 for details.

SO EXCLUSIVE THAT YOU CAN'T USE IT



DX or CZ patch?

Paul Hodgskin, Herts

stf: MIDI synths use a method called System Exclusive (SysEx) to transfer the parameters for their sounds to another synth of the same type or to a computer librarian. Unfortunately, the HT-3000 neither transmits nor receives SysEx, so librarian and editing type facilities are not possible.

OLD THINGY



Kevin Russell, Alloa

stf: If the printer is a 9-pin then there is a good chance that it will work if you select Epson printer drivers from any art packages you use. Contact the Amstrad hotline on ☎ 0891 808181 for further details of your machine – but remember that calls are an unconscionable 48p a minute on 0891 numbers.

COLOURLESS DISPLAY



I have a Mega STE which gives a strange display when connected to my Ferguson TX TV/Monitor using the RGB input. Only about five different colours are displayed on screen. The lead I am using was originally supplied for the Philips CM8833 Mk 1 monitor. Have you any idea what could be wrong?

David Wagner, Lanarkshire

stf: It sounds like you are only getting two of the three colour signals on-screen. The SCART connections for both monitors should be the same, so it is likely that one of the colour con-



READERS' TIPS

ARCH ENEMIES

In STF 34 you recommended that P N Smith needed to use a PC emulator on the Archimedes for file transfer, but there are several Archimedes PD programs which enable direct transfer of ASCII files from the ST to the Archie. You should be able to get them from any good Archimedes PD library.

Kevin Graham, Cumbria

I have a solution to P N Smith's problem of transferring files to the Archimedes which is a bit cheaper than the one you gave in STF 34. There is a small PD program available for the Arc called PD Dir. It creates a new blue disk drive icon on the Desktop of the Arc with an "A" below it. Place an ST-formatted disk in the the Arc's drive, click on the icon and the contents of the ST's disk are displayed. You can now copy ST files directly to an Archimedes disk. The program is PD and costs about £2.00 from any Archimedes PD library.

Malcolm Begg, Stonehaven

DRUMS OUT



I am using a Yamaha RX21 drum machine with Sequencer One on a 1040 STE. I can produce drum sounds using the Step Entry screen and the mouse, but I can't use the drum machine to write patterns by pressing the pads – nothing registers on the STE's screen.

Garry Hewitt, Bedfordshire

stf: The RX21 only receives MIDI note information – pressing the pads does not transmit MIDI notes, so you cannot use it as a sound module. You are either going to have to put up with inputting notes on the Step Entry screen, or buy a cheap MIDI keyboard and input the drum information from there.

LOW DOWN



My 520 STE always boots up in low res even though I have saved the Desktop in medium res. What's going on?

David Shepherd, West Glamorgan

stf: The problem is a bug in the early STE operating system. You need the STE medium res fix program we featured on Cover Disk 10. This is a small program you place in the AUTO folder of your boot disk which fixes the bug. Unfortunately STF 10 is no longer available from our back issues service, but you can get the program along with a surfeit of other software on disk 1191 from the South West Software



Assembly Pointers

Tony Wagstaff answers your queries about assembly language programming

THE BIG SCREEN

Paul Rose from Surrey would like to know how some PD demos manage to fill the entire screen, and if we could devote some space to features specific to the STE.

The ST normally runs at 50Hz but can be switched to 60Hz, resulting in a larger screen. This is the nearly famous 50-60Hz toggle, and can be seen in Jeff Minter's yummy shoot-em-up Llamatron, which was yours on Cover Disk 24 (turn to page 40 if you missed it). Just press <P> to pause the game, then <H> to see the toggle. This is how it's done:

```
move.l    #0, -(sp)
move.w    #$20, -(sp)
trap      #1
addq.l    #6, sp

move.w    #37, -(sp)
trap      #14
addq.l    #2, sp
```

```
bchg      #1, $ff820a

done move.l    #0, -(sp)
      move.w    #$20, -(sp)
      trap      #1
      addq.l    #6, sp
```

If anyone else would like to see more on the STE's enhanced features then drop us a line – the more interest we receive, the more we'll take notice.

STARTING OUT

What is the best assembler/compiler for the ST?

Sean Lavelle, Manchester

How can I start learning to program in assembly language?

Robin Stewart, Devon

Look no further than ST FORMAT Cover Disk 35, where we featured GFA's assembler. Another popular assembler is Devpac 2 (£39.95 from HiSoft ☎ 0525 718181). Version 1 of Devpac was yours on Cover Disk 22. (Turn to page 40 if you missed either of these issues.) You might like to invest in the book

Introducing Atari ST Machine Code by R Pearson and S Hodgson, ISBN: 1-873423-01-2, available from zzSoft (☎ 0245 762965) for £20.00. Follow the articles that appear regularly in ST FORMAT, along with the hints and tips found in ST Answers.

CONTROL CODES

How do you print the control characters 0 to 31 on-screen via the GEM BIOS or BDOS calls?

Don Felton, Cambridgeshire

You cannot print these characters using BIOS calls. You need to use the VDI routine `v_gtext`. The BIOS uses these characters to send the cursor to the next line and other such tricks. The difference can be seen in the following GFA Basic routine, which uses BIOS for its PRINT commands and VDI for TEXT.

Note that the symbol `␣` means do not type a line return yet – the line of listing just wouldn't fit in one of our narrow columns.

FOR x%=0 TO 32

```
PRINT AT(1,1);"this ""CHR$(x%);"is ␣
control code no.";x%
```




Yamaha PSS-790: the inside story

I have a Yamaha PSS-790 keyboard. What are all of the advantages of upgrading the ROM? Also, if the two highest notes are pressed on the keyboard, a sine wave sound is produced and all song data is lost. Why?

J White, Herts

What is the difference between the Yamaha PSS-790 and PSS-795? I use Cubase and a Yamaha PSS-790 and want to know why, when I record something on the PSS then send it to the sequencer, the sound number gets changed.

R Marsden, West Yorkshire

stf: The changes to the PSS-790 are as follows:

1 MIDI In is no longer routed to MIDI Out – this used to cause a MIDI loop and many problems when recording with an external sequencer on an ST.

2 The accompaniment section of the PSS-790 now accepts note information over MIDI from another keyboard or sequencer.

3 Because the accompaniment always plays at full volume, there is a velocity boost feature which equalises the level of the melody to the backing track.

4 Reception of a MIDI Start or Stop command from an external sequencer now sets the rhythm section into play – previously it only operated the internal sequencer. However, this means that if your sequencer outputs a MIDI Start command when you hit “play,” the rhythm section is always started. The way around this is to select track one of the PSS-790's sequencer, press “Record” then “Stop” and leave this track active. When the PSS-790 receives a MIDI Start message, it thinks that the internal sequencer is active and starts playing it, resulting in absolute silence!

The PSS-795 is identical to the PSS-790 except that it has all the above features as standard, and also responds to MIDI Sustain commands received from another keyboard or external sequencer.

As for the two highest notes giving a sine

wave sound and all song data being lost, if you held down these notes while you turned on the power to the PSS-790, you have put it into “self-test mode,” which also initialises the internal memory, leading to the loss of all data. If this occurs when you simply hit the top two notes, it sounds as if your PSS-790 is faulty.

The PSS-790 has 50 styles, each of which sets up the “voices” or sounds for each of the orchestration instruments – these are on MIDI channels 10 to 16. If you are recording on an external sequencer, MIDI Program Change commands are sent at the start of the recording. On playback, these are sent back to the PSS-790, which then selects the correct instruments. If you look at the recorded data on Cubase using the Grid Edit, you should see these program changes. From here, you can alter these as you wish, but be careful – the voice numbers shown on the front panel of the PSS-790 do not match up with the MIDI Program Changes. Have a look at page 38 in the PSS-790 manual for a list of these.

Library, PO Box 562, Wimbourne, Dorset BH21 2YD. The disk will cost you just £3.00.

MIND THE GAPS



I have an old Schneider NLQ-401 printer. Straight text works okay, but if I try to print anything in graphics mode I get white lines about every 4mm. Can you recommend a printer driver to solve the problem?

Kelvin Bird, South Glamorgan

stf: Unfortunately you do not indicate which programs you are having problems with. Every

application has its own customised printer drivers supplied with it.

First, check your printer manual to see if it can be set to Epson or IBM emulation by setting DIP switches. If so, you can use those drivers.

If you are using 1st Word Plus you can edit one of the printer hex files found in the printers folder with the aid of your printer manual. Load up 1st Word Plus and load in a hex file – the Epson one is probably the best one to experiment with. The problem you wish to solve is the line feed length. You simply enter the codes relevant for your printer on the correct line – each entry is clearly labelled. Save the edited hex file

as ASCII with a suitable name (SCHNIDE.HEX) and use the INSTALL.PRGM to create a printer driver.

If you are using different programs then you have to experiment with various drivers or contact the producers of the software concerned. Many companies can supply extra drivers.

MORE MEMORY PROBLEMS



I have an STE upgraded to 1MByte. A short while after I've switched on, vertical white lines appear on the screen, evenly spaced across the display. This

```
~INP(2)
NEXT x%
CLS
FOR x%=0 TO 32
  PRINT AT(1,1);“this on the other
  hand is Character no.”;x%
  TEXT 40,14,CHR$(x%)
~INP(2)
NEXT x%
```

SOUNDING OFF

How do I program the sound chip using the XBIOS Dosound command? It plays the sound I want but then it seems to carry on playing the contents of memory. How does this routine really work?

Robin Grant, Dunstable

Tricky little command, this. Calling it is easy enough:

```
move.l    #data_list,-(sp)
move.w    #20,-(sp)
trap #14
addq.l    #6,sp
data_list
```

```
dc.w
$073f,$080f,$00DE,$0101,$073e,$ff11
dc.w
$80de,$8100,$01ff,$ff11,$0800,$ff00
```

The difficulty lies in what to put in the data_list. This is best explained by looking at how the ST processes this command. Each time the screen is redrawn – which is known as a vertical blank – it reads a byte from the data list. If it comes across a number in the range 0 to 15 it places the next byte into the PSG chip of that number, and then moves on to the next byte. If it comes across the number 128, it temporarily stores the next number, until it comes across the number 129, when it places the stored number into a specified register where values can be added to it. This is used to create siren-like effects – the listing gives a simple example.

When numbers 130 to 255 are encountered, your ST reads the next number and pauses for that number of vertical blanks (each blank is one fiftieth of a second long) before proceeding to the next byte. If that number is zero – and this is probably what Robin is omitting – then the command stops. So, unless you want to know what your internal memory sounds like,

end your data list with \$FF00 in hexadecimal, or decimal 255,0.

WRITE ON TOP

I have written a program to reduce the size of some files for easier storage, but when the program overwrites the old file its size remains the same. Why isn't the file size updated?

Andrew Benn, Lincs

Use the BIOS routine Fcreate instead of Fopen when you come to overwrite the file:

```
clr.w -(sp)
move.l    filename,-(sp)
move.w    #3C,-(sp)
trap #1
addq.l    #8,sp
DATA
filename dc.b    “text.doc”
```

This reduces the existing file's size to zero and opens it, so don't try to open it again. Be careful with this, though – you may lose data if you crash your ST.

often happens after changing resolutions. What can be causing this?

A Derbyshire, Cheshire

stf: Take the lid off your machine and check that the SIMMs memory boards are firmly in place. Sometimes the new SIMMs are not completely pushed into their sockets. Quite a bit of pressure is needed to seat them so that they click in.

WARNING: Always make sure that your machine is unplugged before opening it and always observe static electricity precautions before handling computer chips. Wear an anti-static wrist band or earth yourself by touching a water pipe or a metal window frame to dissipate any static charge which may have built up in your body. Be aware also that you might void your

guarantee by opening your machine if it is less than one year old.



BIT OF A BOMBER

Occasionally when I switch from medium to low resolution my machine bombs out. What could be causing this?

Keith Walker, West Lothian

stf: You may have memory-resident programs which object to the change in resolution from medium to low, or the Desk Accessories may not have enough RAM available to reload correctly. (Desk Accessories re-initialise upon a resolution change.) The memory clean-up routines often cause this problem when changing resolutions. Format separate disks to boot in

low and medium resolutions and re-boot instead of changing resolution.



MEMORY PROBLEMS

Since I've had my STFM upgraded to 1MByte of RAM using a solder-in module, several of my programs now crash after a time with nine bombs shown on screen. What could be causing this?

M Holden, Nottinghamshire

stf: There are several errors which cause the ST to crash and the number of bombs on-screen indicates the particular error code. After extensive research we have found that nine bombs indicate an invalid memory block address, so it would seem that the upgrade is



GFA Programmers' Surgery

Barrie Capel solves more of your GFA Basic programming problems

WHICH INPUT?

A number of readers, including **John Sables in Barnstaple**, want a bit of help with text formatting when using **INPUT**.

INPUT A tells GFA Basic to stop and wait for you to type in a numeric value. **INPUT A\$** is the same, only with strings (a letter, word or sentence). However, the position on screen at which the prompt "?" appears varies depending on what has been printed on the screen previously. If **CLS** has been used, the "?" prompt appears in the top left corner. If you have printed on the first 5 lines, then the "?" appears on line 6 (the next available line).

You can, however, with GFA Basic, add an input text and alter the prompt position as follows:

- **INPUT "Enter Your Name ";a\$**
Gives you standard input with the text "Enter Your Name" just before the ? prompt.
- **INPUT "Enter Your Name > ",a\$**
Gives you the same input with the text "Enter Your Name," but the comma in place of the semi-colon disables the "?" prompt. You can then, should you wish, use another character in the text to simulate a prompt – for example, the ">" above.

To position the input on screen, use **PRINT AT**, as follows:

```
PRINT AT(12,12);
INPUT "Enter your name ";a$
OR
INPUT "Enter your name ",a$
```

The **PRINT AT(12,12)** positions the cursor 12 characters across the screen and 12 characters down, and the semi-colon on the end prevents the cursor from dropping down onto the next line, so the **INPUT** is entered on the same line.

There are two other **INPUT** options which may be of use: **FORM INPUT** and **LINE INPUT**. **FORM INPUT** enables you to specify the maximum number of characters to accept. For example: **FORM INPUT 10,a\$** does not let you type in more than ten characters.

It is possible to input more than one variable at once with:

```
INPUT "Please Enter Make, Model, Size, Colour", A$,B$,C$,D$
```

(The symbol **↵** means do not type a Return yet – the line of listing simply wouldn't fit in our narrow columns.) You enter each variable separately, pressing the <Return> key after each, or all on the same line, each separated from the next by a comma. This is allowed because the comma is treated as an input "separator," separating more than one entry. However, if you had:

```
INPUT "Enter a line from a nursery rhyme ";↵
A$
```

and typed in "Mary had a little lamb, its fleece was white as snow," then everything after the word "lamb" would be ignored – the comma would have been treated as a separator.

The other input command is **LINE INPUT**, which gets around this problem by accepting the whole line as the input, including commas:

```
LINE INPUT "Enter a line from ↵
a nursery rhyme "; A$
```

FLASHING MOUSE POINTERS

Julian Toler of Nottingham and one or two other readers have asked about the "flashing" mouse pointer effect in GFA Basic, and how to stop it.

The effect is caused by the mouse pointer being turned off every time something is output to the screen. Without this feature, you would be forever filling in "holes" in the screen if the mouse pointer happened to be at the same position as your output. (The pointer is actually a rectangular block, so the effect is like putting a postage stamp on a piece of paper, spraying paint onto the paper to produce a picture, then moving the stamp to a new position, leaving a hole where it was.)

Julian says he eventually cured the problem with **SHOWM** and a small **PAUSE** directly after it, and **Martin Boika in Gwent** suggests defining a mouse pointer as a sprite and using **SPRITE mouse\$,X%,Y%**. My own personal cure for the problem is to trap the program in a loop...

If the mouse pointer flashes every time you **PUT** graphics or **PRINT** text to the screen, doing so in a loop can sometimes cause the pointer to disappear, so one answer is to output to the screen *only* when you have to. If you've **PUT** graphics or **PRINTED** information, don't do it again unless the graphics move or the information has changed.

One of the more common occurrences of this

problem is when you want the X and Y coordinates printed on screen when you move the mouse. In this case, you can stop the flashing by trapping the program in a loop as follows.

```
DO
MOUSE X%,Y%,Z%
PRINT AT(1,1);"X= ";X%;" Y= ";Y%;" "
SHOWM
OLDX%=X%
OLDY%=Y%
OLDZ%=Z%
@Stopflash
LOOP

PROCEDURE Stopflash
REPEAT
MOUSE X%,Y%,Z%
I$=INKEY$
' This loop does nothing but wait
' for the mouse to be used
' or a key to be pressed on the keyboard.
UNTIL X%<>OLDX% OR Y%<>OLDY% OR ↵
Z%<>OLDZ% OR I$<>" "
RETURN
```

With this example, the mouse is read and the coordinates are printed to the screen. The variables **OLDX%**, **OLDY%** and **OLDZ%** are set to equal the current X, Y and Z values of the mouse, and the procedure **Stopflash** is called. There, the program sits in the **REPEAT...UNTIL** loop reading the current mouse position into X and Y and the button status into Z.

If the mouse isn't moved, and no buttons are pressed, X, Y and Z are the same as **OLDX**, **OLDY** and **OLDZ**, so nothing happens – not even a flash of the mouse pointer!

If the mouse moves, either X does not equal **OLDX** or Y does not equal **OLDY** or both, and if a button is pressed Z does not equal **OLDZ**. Either way, the **UNTIL** condition is met, and the procedure is exited from and program control returns to the main loop, where the mouse position is re-read and printed to the screen before the process is repeated. Since it is the **PRINT** line which causes the pointer to flash, the problem is cured.

You may have noticed that I've also taken the keyboard into account with **INKEY\$** in **Stopflash**, so pressing a key also exits from the procedure, enabling you to act on it.

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the source of the problem. Contact the ST FORMAT Soup Up and repair service number (☎ 0480 890787) and they will give you an quote for a check-up and repair of your machine.

CAR BOOT BARGAIN



I have bought an Epson HI-80 plotter from a car boot sale without a manual. Where can I get one from? Can I use it with GFA Draft Plus 3 from Cover Disk 34? If so, which plotter driver do I use to run it?

Ken Halliday, Cheshire

stf: The plotter drivers for GFA Draft Plus 3, including one for the HI-80, are on this month's Cover Disk – see the Cover Disk pages, beginning page 6, for details of setting up the correct driver for your plotter. As for the manual, contact Epson on ☎ 0442 61144. They should be able to help out.

SIMPLE PROBLEM



I want to upgrade my 520 STE to 1MByte but I have been told by a computer shop that there are many different kinds of ST circuit board and I may have to have a special upgrade fitted. Is this true?

Davi Spratt, Tyne and Wear

stf: The computer shop were referring to the older STFM machines, which do have many configurations. In your case you should be able to simply purchase two 256K SIMMs and simply plug them in. See our memory upgrade feature in STF 35. If you missed that, turn to page 40.

ARCHIVE QUERY



I have been given a disk which appears to be archived from a hard drive. Is there any way of getting the files off the disk?

Gavin McDonnell, West Midlands

stf: It is extremely unlikely that you can access anything from the floppy disk. Most hard drive



READERS' TIPS

COLOUR 1ST WORD PLUS PRINTER DRIVER



Mike Bowen of Chester-le-Street, County Durham, has a prize-winning tip for anyone trying to produce coloured output from a printer.

Gareth Walker asked about colour printing from 1st Word Plus in STF 34. It is possible to print colour images from within 1st Word Plus files, although the manual makes only a minor reference to this fact. Medium resolution images can be captured with the Snapshot Desk Accessory and incorporated into documents in the normal fashion. Although the four default medium resolution colours are somewhat limiting, this is quite adequate for line drawings and diagrams.

However, the real beauty of 1st Word Plus for those with unusual printers (like 24-pin colour) is the facility to customise the printer driver. For example, it is quite sim-

ple to modify the printer driver to enable sections of coloured text to be printed. This is how:

- 1 Make yourself a copy of the most appropriate printer driver hex file.
- 2 Edit this file using 1st Word Plus in non-WP mode – that is, as ASCII.
- 3 Select one of the accented characters in the character translation table that you do not wish to use.
- 4 Replace the hex code for that character with the hex code instruction from your printer manual for a particular colour of print.
- 5 Repeat steps 3 and 4 for each of the colours supported by your printer – including black.
- 6 Save the edited driver file & run the Install program provided with 1st Word Plus.

When this driver is loaded it is possible to print blocks of coloured text by preceding the text with the relevant accented character from the Font Table. The end of the block must be succeeded by the character representing black. This technique can be used to control just about any feature of your printer which is not directly supported from within 1st Word Plus.

It is a good idea to create a file called "HELP.DOC" containing a small table indicating the modified characters and their effects. This file can then be opened within a document whenever a special effect is required.

backup programs take the entire hard drive contents and convert them into one huge file which is then split into floppy disk sized chunks. These chunks are then restored to the hard drive in the same order in which they were saved off it.

MORE PC WIBBLE



If a PC can read an STE disk then you must be able play PC games on an STE. I was told that the STE and PC code are the same, so why won't the games I've bought load?

Jason Tang, Manchester

stf: STs can read data off PC disks, but that's not the same as running PC programs. The ST and PC are entirely different machines with non-compatible operating systems, so no games software designed for one machine can

work on the other. The exception is if you use a hardware emulator – but games running under emulation are no substitute for the real thing.

ST TO APPLE



Can I get my 1st Word Plus and Write On files onto my secretary's Apple Mac at work? She uses a word processor called MacWrite.

Keith Lambourne, Kent

stf: Yes, you can. Save your ST documents as ASCII text files on to an MS-DOS (PC) format disk. You can then load the files into the Mac using the Apple File Exchange program supplied with the Mac, which enables the Mac to read PC disks. It is a good idea to select the Text Transfer option from the MS-DOS to Mac menu, rather than using the Default Translation protocol, to help make sure that any stray command characters are stripped out.

ST answers

We want to hear your problems. If you're having any trouble using your ST, let us know and we'll try to help. We guarantee to answer every ST query we receive

(once, at any rate). Just write your problem on this form and mail it to us at the address below – free!

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Address

My query/tip has to do with: (Please tick the box that applies)

Beginners ☐ Comms ☐ Disks ☐ Graphics ☐
 Hard drives ☐ Printers ☐ Sound/MIDI ☐ ST problems ☐
 Programming (assembly language) ☐ (GFA) ☐ (STOS) ☐

My query/tip is:

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We want your problems. What's making your ST life a misery? Let us know and we'll pass it on to our panel of experts, who'll do their level best to solve it. Or perhaps you've found the solution to a problem yourself. Send it in and you could win yourself up to £50, simply for sharing it! But please do check this issue's answers before you write in – the solution you need could be waiting there for you now! We guarantee to answer queries written on this coupon and addressed directly to ST Answers. Although we make every effort to answer all problems we receive, we obviously can't guarantee to answer detailed queries which span several pages. Games tips should be addressed to Gamebusters. Queries about games are answered in Gamebusters as soon as we receive the relevant solution.



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PLEASE SEND A BROCHURE ON THE ST RANGE

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Which computer(s), if any, do you own? 79B



Now screening

Your ST isn't a great deal of use without a visual display unit, but you can do much better than your family TV. For this special *ST FORMAT* roundup, Peter Crush and Clive Parker were given a watching brief, and have been giving themselves square eyes looking into the range of monitors available for your ST

Why you need a monitor...

- 1 Televisions were never designed to display your ST's output. They just happened to be the nearest thing around when micros first came out, and were consequently pressed into use.
- 2 By contrast, a monitor provides clearer text and graphics. It is specifically made to perform this process, and provides a much sharper, cleaner image. And some monitors even have stereo sound!
- 3 The fuzzy picture you get from your TV may give you strained eyes and possible headaches if you are exposed to it for any length of time, especially if you are trying to read text in word processing or desktop publishing software.

...and which one to choose

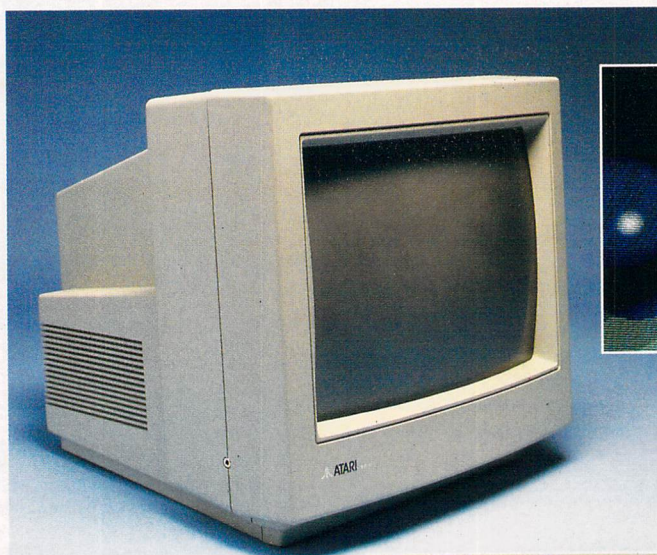
Mono monitors display the ST's high resolution screen mode of 640 x 400 pixels in black and white only for maximum clarity, and are the best for WP, DTP and music sequencing programs. Atari are famous for their own mono monitors, designed especially for the ST.

Colour monitors are best for games, educational software, demos, and art and painting programs. Even the latest DTP programs use colour now. As well as Atari's own colour monitors, there are a couple of other makes too.

Multisync monitors display both colour and mono output, but are rather expensive and too specialised for the average ST owner. They are convenient if you need to switch between high res and others, but it is still cheaper to buy both a mono and a colour monitor than a multisync.

Large screen monitors are really specialised. They tend to be employed by professionals for DTP and Computer Aided Design work. A4 screens display a whole page at once, and there are even huge A3 monitors – expensive, but the ultimate in visual display.

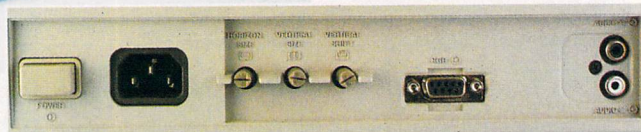
COLOUR



● The Atari SC1435 without pedestal or tilt and turn stand. See how beautifully it matches the shade Authentic Atari Grey?



● The test picture of three ray-traced balls. You can see that the balls are ball-shaped, the colours are bold and the overall image is clear. Suggests that this is a pretty good monitor really, doesn't it?



● Just look at the backside on that! Perhaps it looks a bit basic, but you're likely to actually use all the controls – nothing's superfluous.

Atari SC1435

MACHINE: ALL STs

PRICE: £249.99

FROM: LADBROKE COMPUTING

CONTACT: 0772 203166

The Atari SC1435 is really a Philips – you don't seem to be able to get away from them! – but it's a total re-style of the CM8833 chassis and includes a tilt and turn stand. It is made in Taiwan, and can be used with or without its pedestal base.

There is no control for colour intensity or saturation, but on the Philips CM8833 this has little effect anyway. On the rear panel, superfluous input options have been removed – the monitor accepts only analog Red Green and Blue video signals like those you get from the ST. This means that you can't attain the same high quality picture if you're using other brands of computer. What other brands of computer? You wouldn't

even dream of using anything other than your ST now, would you?

In other respects, there is little difference between this and the Philips CM8833 and the Protar Visto. With its stand off, it is about the same size; the same kind of IEC power lead and monitor lead are used, and the On/Off switch is in the usual position at the rear. The screen is the same reflective 13 inch job as the others, but appears to be much flatter. The control knobs for volume, contrast and brightness are situated unobtrusively on the front panel and are all easy to use so you can quickly and easily set up a quality picture.

Previous Atari colour monitors were often criticised for their rather dull and dark picture, but the SC1435 is outstanding, with a really strong image and good bold colours. Sound quality is also superior, and the attractive styling and tilt and turn base all combined to make it a winner – it was certainly the best of all three colour monitors on test. Considering the fact that this monitor is available for roughly the same price as its competitors, it really is a good buy.

STF RATING: 90%



The ST is a great machine capable of excellent graphical output, and you have probably seen just how good programs look when running on a professional monitor. But sadly many owners spoil their ST's visual virtuosity by using an inadequate device, typically an old television or a cheap portable TV. Our latest reader survey revealed that only about a third of ST readers own a monitor, which means that the majority are missing out in the vision stakes and failing to do justice to their STs. The only way to both look after your eyesight and see clearly what your ST is doing is to get yourself a proper monitor.

Monitors are not as expensive as you might imagine, and they have got cheaper in real terms lately, with a better range available than ever before. There are hundreds of monitors on the market, but most of them are not suitable for the ST. Luckily, the select range of monitors that do work perfectly with STs are very good, and to help you find the right one we have gathered them all together for testing in this ST roundup. **stf**

DO NOT ADJUST YOUR SET

Most of the controls on a monitor are pretty obvious and straightforward – colour, volume, brightness and contrast work just like the controls on your television. On the back panel of the monitor there are often some extra little knobs for you to fiddle with, and as long as they are detailed in the manual you cannot do any harm.

For example, there are usually two controls to adjust the size of the picture, labelled Horizontal and Vertical Size. Turning these knobs stretches or contracts the size of the picture on-screen. The largest size of picture does not always give the best results, especially with text, and often the optimum image is framed by a blank border around

the outer edge of the screen. For games, however, you may be able to adjust the picture to virtually the full size of the screen without loss of quality. There are usually two further controls for adjusting the position of the picture on screen. The image can be slid left and right or up and down if need be.

Although there are often other controls for things like focus, these are invariably *inside* the monitor, and *should not* be touched. Leave these to experienced technicians. Not only does opening up the monitor void your warranty, but there are also potentially *lethal* currents of many thousand volts circulating inside the chassis. If you are not happy with the picture, get the supplier to deal with it!

● The colour of the Philips CM8833 mark 2's casing tones in well with STs, but, perhaps more importantly, gives you a solid image with strong colours – perfect for games.



● Elongated balls, eh? Well, only a bit – and look! – the colours aren't bad at all, the edges aren't blurred and yes, it *is* the same raytracing as before.

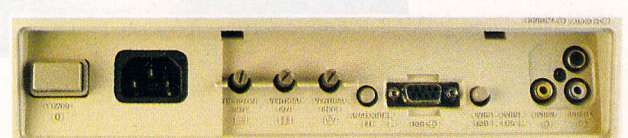


● The back bits of the Philips CM8833 mark 2. A lot of these bits are pretty much redundant with the ST, so, um, ignore them. The other bits are quite good though.

● Snazzy logo, innit? But just what does Visto mean, exactly? We reckon it's a translation error, and it was supposed to be "Vista" or "Bisto" or something.



● Pretty much like all the rest, isn't it? Course, the best bits are all in the shadows behind, but we can't show you those for fear of litigation.



● Hmm. Looks just a little bit like the Philips, doesn't it? That's because the Protar is just the same tube in a different box.

Philips CM8833 mark 2

MACHINE: ALL STs

PRICE: £229.99

FROM: PHILIPS

CONTACT: 081 689 4444

The original Philips CM8833 colour monitor was better than Atari's own colour monitor and a bit cheaper, so it became almost the default choice if you wanted a good colour monitor for your ST. The Mark 2 version that appeared last year is even better, with neater styling, improved electronics and stereo sound. The On/Off switch is at the back, and a flip-down cover on the front panel hides all the adjustment knobs for volume, contrast and so on – a mixed blessing, because this means that making alterations to the settings can be fiddly. The screen is reflective,

so you do not want any bright lights or windows behind you – the reflection may be distracting or even uncomfortable. The monitor is made in Taiwan and BEAB approved.

The colour control's range is not large and seems to make very little difference to the colour intensity of the picture, which is most acceptable anyway. Sound output is good, and there is a mini stereo jack socket you can plug your earphones into, cutting out the main speakers, so you can listen in private. The CM8833 is an excellent colour monitor for your ST – its bright, solid image and strong colours make games look great. The only minus is the lack of an inbuilt tilt and turn stand. Since the CM8833 is compatible with many different micros, make sure the correct monitor lead is supplied with it – you should not be charged any extra for this.

STF RATING: 80%

Protar Visto A14CM

MACHINE: ALL STs

PRICE: £219

FROM: PROTAR

CONTACT: 0923 254133

From the German company Protar, suppliers of an excellent range of hard drives for the ST, comes this monitor based on a chassis and electronics made by Philips in Taiwan. Protar claim the electronics are an improved version of those in the Philips CM8833, and offer a 12 month replacement warranty.

The screen size is the same as the Philips monitor's, with the same reflective surface, and the back panel of the unit is also identical. An IEC mains lead is supplied.

The recessed front controls are easily accessible as well as being

convenient to adjust at the same time as being unobtrusive. There is really nothing to choose between the Visto's picture and that of the benchmark Philips monitor, and you get the same advantages of stereo speakers, "green screen" switch and earphone socket as well.

There is no tilt and swivel base, but it is possible to vary the tilt between three different angles with a flap device built into the underside of the monitor. This works well enough, but if you want the fullest adjustability you have to buy a suitable tilt and turn base as an extra from your supplier – Protar themselves do not offer one. Unfortunately, Philips have now stopped supplying Protar with components for these monitors, but there are stocks in the hands of Protar dealers and Protar may well develop other sources and continue producing a monitor.

STF RATING: 80%

MONO



● It's sleekly stylish and – hey! – a '90s monitor. It's also two inches bigger than the older monitor. And it's got a flatter screen. And the name's gone up by 20.

● There are hardly any bits worth looking at at all on the back of here. It's all very minimalist and avant garde.

Atari SM144 mono monitor

MACHINE: ALL STs

PRICE: £119.95

FROM: EVESHAM MICROS

CONTACT: 0386 765500

The Korean-made SM144 monitor is the third in a series of excellent monochrome monitors made by Atari, superseding the SM124 and the earlier SM125.

This one has a larger, flatter screen than its predecessors – though the size of it is nearer 13 inches than the claimed 14 – and a removable tilt and turn base that neatly fits exactly over the top of a Mega STE. This makes it the perfect mate for this machine, but it is equally suited to all the other versions of the ST. The On/Off switch is on the front

panel, more convenient than the rear-mounted switches on most of the other monitors tested. Mains power is via an IEC lead (kettle cable!) and the monitor lead is fixed to the monitor.

The picture is very good indeed, and the non-reflective screen is ideal for word processing or DTP work – there is no annoying flicker and the image is rock-steady. There is however only a single speaker for audio output. Controls on the rear enable you to adjust the picture to fill the screen completely if you want, without distortion. The only criticism is that the SM144's picture is not quite as bright as the old SM125's, but this would only be a problem if you were trying to use the monitor with direct sunlight falling on the screen.

All in all though, the SM144 is the best value mono monitor now available for the ST.

STF RATING: 90%



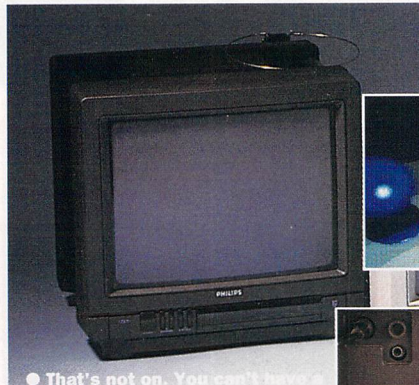
HIGH-PITCHED SCREENS

This is how your ST displays its images on screen. A DIN socket on the rear of the machine takes the video output from the ST as an analog Red-Green-Blue (RGB) signal, a high resolution monochrome signal and a composite video signal, via its 13 pins. It also carries the audio output, and,

depending on what type of monitor is connected, the appropriate signals are used to produce the picture.

When you plug it into an Atari monochrome monitor, your ST automatically switches to high resolution mode, producing a mono image with a resolution

SPECIAL



● That's not on. You can't have a black monitor – it doesn't match.

● Let's be honest, it's a pretty crap picture, isn't it? But then it's only a TV. Try watching Red Dwarf on your CM8833.

● The blue thing there is a SCART socket.

What does SCART stand for?

Philips Cube TV

MACHINE: ALL STs

PRICE: £279.99

FROM: PHILIPS

CONTACT: 081 689 4444

The Philips Cube TV, available with either a 15 inch or a 17 inch screen, is a television receiver and monitor in one cube-shaped box – hence the name. It has a remote control, where you can adjust colour intensity and the like, but there are switches on the front panel for simple matters like switching On/Off, changing channels and adjusting the volume. The Cube is available with or without Teletext – the difference is about £30.

The Cube's TV picture is very good, and reception is acceptable even using its loop aerial in a weak reception area. Unless you have a really ancient

ST, or some versions of the Mega ST, your machine has a TV output you can connect to the Cube's aerial socket. This produces a reasonable picture, though not great because the ST's video output has to be converted from RGB into a modulated signal to go down the aerial lead, and then back again inside the TV. You can get better results with a SCART lead, available from many lead specialists or electronics shops for around £13.00: at the TV end is the distinctively shaped SCART plug, and at the other end a normal ST monitor plug. This setup offers image quality almost equal to a dedicated monitor's – certainly just as good for game-playing, maybe falling down a little on text, but certainly far better than any normal TV's. If you can't justify the expense of a monitor for its own sake, The Cube could offer a good all-round solution.

STF RATING: 76%

WORTH LOOKING INTO: ST-COMPATIBLE MONITORS

Sizes quoted are the overall space taken up by the monitors, including protruding plugs and the like. Screen sizes are measured diagonally corner to corner. All sizes are in inches

	Price	STF rating	Size (inches) WxHxD	Screen size	Image size Maximum	Image size Optimum	Stand (a)	Speakers	Headphone Socket	Pic quality	Sound quality	Controls (b)
COLOUR												
Atari CM1435	£249.99	90%	14x16x17	13 inches	9.5x8	9.5x5.5	t/t	stereo	stereo	very good	very good	hs,vs,hp,vp,v,b,cn,g
Philips CM8833 Mk 2	£229.99	80%	14x14x18	13 inches	9.5x8	9x6.5	tilt	stereo	stereo	good	good	hs,vs,hp,vp,v,b,cn,cl,g
Protar Visto	£219.00	80%	14x14x17	13 inches	9.5x8	9x6.5	tilt	stereo	stereo	good	good	hs,vs,hp,vp,v,b,cn,cl,g
MONO												
Atari Sm144	£129.00	90%	13x14x14	13 inches	10x7	any to max	t/t	mono	none	good	good	hs,vs,hp,vp,v,b,cn

of 640 by 400 pixels. A pixel (picture element) is the smallest dot on the screen – the more of them, the better the resolution and the more detailed the picture. Most “serious” software runs in high resolution, in black and white.

If the ST is connected to a colour monitor, you can select either medium or low resolution from the Desktop. Medium resolution uses 640 by 200 pixels, and can display

just four different colours. Low res uses 320 by 200 pixels, but can display 16 colours at a time. Most games run in low res because they need plenty of colours. Medium resolution is less popular, but used by some business and serious software. Not many programs can run in all resolutions, notable exceptions being the art package *Degas Elite* and word processor *Protext*.

Ensure that when you buy software you

have the correct monitor – it's no good getting a colour-only game if you only have a mono screen! Although there are software “emulators” that can simulate a high res picture on a colour screen, or a dithered “colour” picture on a mono screen, these are not 100% effective and there is no real substitute for the genuine article. If you end up with both a mono and a colour monitor, it may be worth getting a Monitor Switch

Box to save pulling out the monitor leads to swap between them. This is a box which plugs via its own flying lead into the ST's monitor port and provides two monitor output sockets so both screens can be left connected. A two-position switch on the box enables you to easily swap between them. Evesham Micros (☎ 0386 765500) supply a good Monitor Switch Box for just £13.95.



● Yes, it's a monitor. Yes, it looks like all the other monitors. No, it's not very exciting.

● Oh look, this is pathetic. There are no techy bits on here at all. Looks like a bloody statue or something. Pah.

Eizo Flexscan 9060S multisync monitor

MACHINE: ALL STs

PRICE: £586.33

FROM: THE ATARI WORKSHOP

CONTACT: 0753 832212

What's the point of buying a multisync monitor? In a word, convenience. You can switch between high res and low without having to switch off and change leads – though it's inherent in the design of the ST that the machine still reboots when changing to and from high resolution.

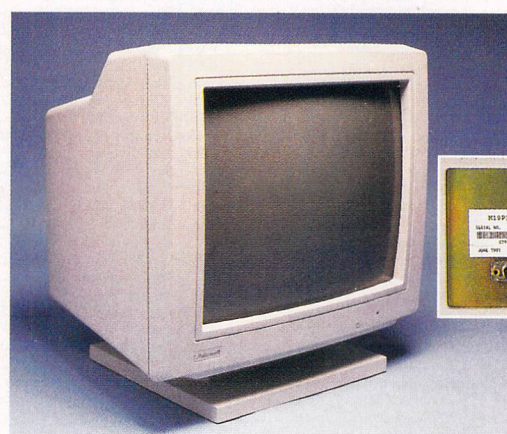
The Eizo 9060S has a 14inch screen but is deeper than most monitors. A tilt and swivel base is included which sits neatly on top of both the old and the new style Mega STs. All controls are at the front below the screen – power, contrast, brightness and a

switch to change between black and white, amber and colour modes, as well as controls to centre and stretch the display horizontally and vertically.

The high res display is very crisp and clear, with excellent contrast, and the colour display is as good as the Atari colour monitor's. The amber display makes little practical difference, but some might prefer it. A special switched monitor lead is supplied to enable simple changing from colour to mono modes. As usual with multisync and VGA monitors, there is no provision for audio built in – so unless you have an STE, Mega STE or a TT with phono outputs for an external audio system you are stuck with a silent machine.

This is an excellent replacement for both your colour and mono monitors, though the rather high price and lack of sound output make it more suited to professional use.

STF RATING: 84%



● A model, to scale, and fully working, of the bloody massive Proscreen thingy.

● They could have burnished up that metal a bit. I know a good burnishers'.

Proscreen TT

MACHINE: MEGA ST, MEGA STE AND TT ONLY

PRICE: £732.00 FOR TT; £979.00

WITH CARD FOR MEGA

ST OR MEGA STE

FROM: PROTAR

CONTACT: 0923 254133

This is a big 19 inch high resolution monitor designed for use with DTP or CAD programs, enabling you to display a large area of a drawing or document. To use it, you need a Mega ST or Mega STE (both with graphics cards installed) or a TT.

Even with the older Mega ST range, it takes longer to disassemble the machine than to actually install the card itself. Then you need to install the large screen driver software onto your

hard drive's boot partition – it's best to make the large screen driver the first item in the AUTO folder. You simply connect the monitor to a lead from the graphics card.

The monitor produces a very clear display, although it is rather unnerving to have a window displaying 97 program and file icons in only a third of the full screen area. The only external control on the monitor is a brightness control mounted on the front; the power switch is way round the back. The dot pitch of the screen is smaller than the Atari SM124's or SM144's, so a much sharper image is generated over the same physical screen area, giving increased resolution. All the GEM-based programs and Desk Accessories we tried ran perfectly.

This is an enormous monitor well suited to the serious ST or TT owner who needs an expanded working area.

STF RATING: 87%

	Price	STF rating	Size (inches) WxHxD	Screen size	Image size Maximum	Image size Optimum	Stand (a)	Speakers	Headphone Socket	Plc quality	Sound quality	Controls (b)
SPECIAL												
Philips Cube TV	£279.99	76%	15x15x15	14.5 inches	9.25x6.25	n/a	none	three (c)	mono	acceptable	very good	v,cn
Eizo Flexscan 9060S Multisync	£586.33	84%	13.5x14x17	14 inch	adjustable	n/a	t/t	none	none	very good	n/a	hs,vs,hp,vp,b,cn, (d)
Proscreen TT large screen	£732.00/ £979.00	87%	18x18.5x16	19 inch	14x11	n/a	t/t	none	none	very good	n/a	b

NOTE: (a) Stands: t/t = tilt-and-turn.

(b) Controls: hs = horizontal size; vs = vertical size; hp = horizontal position; vp = vertical position; v = volume; b = brightness; cn = contrast; cl = colour; g = green screen

(c) Philips Cube TV has three speakers: woofer, tweeter and ordinary mono.

(d) Eizo multisync has colour/mono control and amber screen control.

AMAZING PRICES FOR ATARI USERS

GAME	PRICE	GAME	PRICE	GAME	PRICE
2 - Hot 2-Handle (Comp)	20.95	Fire and Ice	17.45	Mavis Beacon Teaches Typing	20.95
2000 Leagues Under the Sea	6.96	First Letters (under 5s)	6.96	Max (Comp)	20.95
3D Construction Kit	26.95	Fists of Fury (Comp)	17.45	Mega Twins	17.45
4 Wheel Drive (Comp)	20.95	Flight Simulator 2	23.95	Mega-Lo-Mania/First Samurai	20.95
4D Sports Driving	20.95	Flood	8.95	Megatraveller 1	1 meg only 20.95
A.P.B.	6.96	Football Crazy (Comp)	17.45	Mercs	17.45
A320 Airbus	50Hz 25.99	Football Director 2	17.45	Metal Mutant	17.45
Action Masters (Comp)	20.95	Forgotten Worlds	6.96	Microprose Golf	23.95
Addams Family	17.45	Formula 1 Grand Prix (Budget)	4.49	Midnight Resistance	6.96
Advanced Destroyer Sim	7.95	Formula 1 Grand Prix (MP)	23.95	Midwinter I	20.95
Advanced Fruit Machine	5.95	Fun School 3 (5-7)	17.45	Midwinter II	23.95
After Burner	6.96	Fun School 4 (5-7)	17.45	Mig 29M Super Fulcrum	26.95
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The ST FORMAT Reviewers



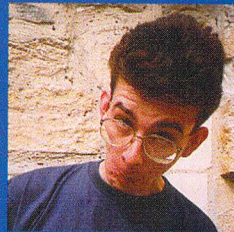
ED RICKETTS

Do not touch. Do not approach. If sighted, call the police, the fire brigade and a reliable psychiatrist. Then run away and hide, and watch the firemen argue with the policeman. Ignore the psychiatrist – that was a red herring.



PAULA RICHARDS

Treat Paula nicely and she'll reward you with her stirring story of how she escaped from a travelling circus at the age of seven. It was travelling at the time, which is why she's now terrified of clowns, particularly those on motor-bikes.



JON PILLAR

You know when you get that uneasy feeling that someone's watching you? That's Jon. You know that person who stands behind the news reporter on the TV with a blank face? That's Jon. You know Jon Pillar? That's Jon.



CHRIS LLOYD

Lloyd by name and Lloyds by nature. Yes, indeed, Chris is actually a small branch bank somewhere in Cheshire. He offers very competitive rates on mortgages and a wide range of white goods, which he sells round the back of a Sunday.



JAMES LEACH

James has some bad habits. On the phone, he speaks just loud enough so you can almost hear him but not quite. He stands in queues and leaves just before he's served. Most of all he enjoys upsetting small children by talking to them.



ANDY HUTCHINSON

Andy's motto is "Whenever two milk floats shall meet, they shall stop and exchange much milk, whereupon they shall restart and carry on as if nothing had happened." He's lived his life by that credo, and, by God, it shows.

SCREENPLAY

COMPLETE SOLUTIONS TO *DIZZY*, *PRINCE OF THE YOLK FOLK* AND *ELF* • CHEATS FOR *PRINCE OF PERSIA*, *POPULOUS 2* AND *TEN* OF YOUR FAVOURITE ST GAMES – PAGE 88

Welcome to the new improved cut-out-n'-keep Screenplay Intro. Simply cut out this page and keep it. Month by month, you can build up a collection of Screenplay Intros, until eventually you have a complete set. And a worthless pile of mutilated *STFs*...



THE ADDAMS FAMILY

They're creepy and they're kooky. But they're not, are they? They're rather sad and predictable and out-dated. (Note: the views of the writer are not necessarily those of the management, but that's only because the management is wrong.)

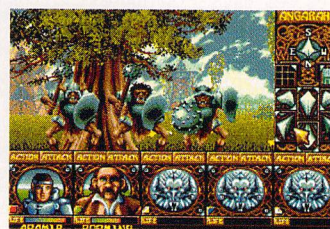
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EPIC

The scene: a programming team's office sometime in 1983. "Listen, I've had this great idea for a game. It's called *Epic*..." Some time has passed – it's now 1992. "Listen, I've had this great idea. Let's finish the game." And lo, it was done.

PAGE 70



ISHAR - LEGEND OF THE FORTRESS

Realising that the captions were going to get rather silly, the characters in *Ishar* decided to form a collective and do their own caption. Unfortunately it got replaced by one saying that *Ishar* is the new RPG from Silmarils and a follow-up to *Crystals of Arborea*.

PAGE 78



PARASOL STARS

"So," said Bub, "if nothing is absolute, then everything is relative." Bob nodded. "So that means," continued Bub in a scary lights-on-but-no-one-home way, "that we're in the new game from Ocean." "Good grief," said Bub, "you're right."

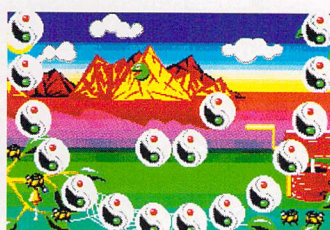
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SPACE CRUSADE

The scene: the same programming team's office, just after the last bit. "Have you seen Gremlin's new game? It's the follow-up to *Hero Quest* and is based on the board game, apparently." "Be quiet. I'm trying to finish *Epic*."

PAGE 74



WIZKID

"So," Bub went on in an appearing-in-the-wrong-caption sort of way, "that means we can't be in Ocean's other newie, Sensible Software's zany follow-up to *Wizball*, *Wizkid*?" "Good grief," said Bob again, "do shut up."

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BEATEN TO A PULP THIS MONTH

and then spread on toast
(lightly buttered and gently browned
under a moderate grill)

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THE ST FORMAT REVIEW POLICY

● It is *ST FORMAT* policy to review only finished games – that is, the games you could actually buy in the shops – never incomplete or demo versions.

● We review *all* games released, but only when they are finished. We won't be rushed into reviewing unfinished games to beat our "competitors."

EPIC



Oh say can you see, by the dawn's early light, the smoke from that Rexxon craft, going down as we laughed mani-cally? Da da-da da da daaa, da da-da da da daaaa, etc and so on. The game: *Epic*. The reviewer: Ed Ricketts. The theme: American. The punchline: missing

There are several things in life you really don't want. You don't want to become involved in a clandestine Mafia drugs ring, for instance. You don't want to appear in an advert for *The Sun*. And you don't want to get the massed hordes of the Rexxon empire annoyed.

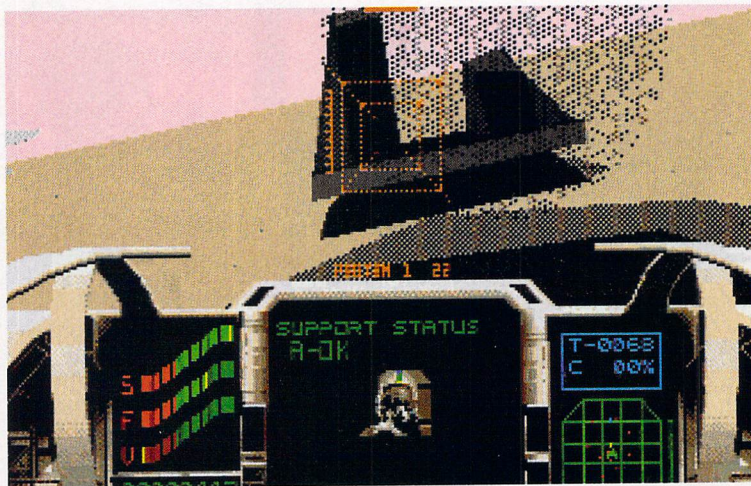
Ah, now there's the problem, you see. You sort of already have. It's like this: your sun is about to go supernova, so the boffins on your world decide to hoik the entire population off to another planet on huge ships. Problem is, this means passing through the Rexxon's territory. Relations between your planet and the Rexxons' haven't been at their best ever since they called your planet a poof when they were down the pub one night. So the presence of several sodding great battle cruisers drifting through the Rexxon Neutral Zone gets their backs up just a little.

But never fear. Your scientists, busy chaps that they are, have also

come up with a little number known as the Epic craft. This is, plainly speaking, the dog's testicles – apart from a few niggling faults, like the fact that it runs out of fuel every five minutes. With this little beastie – or rather, three of them – your job is to wipe out the entire Rexxon fleet and protect your own peeps from complete and utter destruction. Hey, it's a snip.

SEX DEATH HORROR

Epic is a game of monumental destruction, eight missions of it, all depicted in gut-wrenching 3D. The missions usually have two objectives each, involving as much sabotage of the Rexxon Empire as possible. For example, the second objective of the first mission has you destroying a deep space tracking station on the planet Amragan Nine to enable your fleet to go past. Interspersed with these sneaky missions are the more direct confrontations in space – that is, the bits where you and the



● Aren't Rexxon a make of staples? It's not very frightening having a fleet of staples coming after you, is it? I mean, what are they going to do, prick you slightly?

Rexxons shoot seven shades of saffron out of each other. There's a password given for each successfully completed mission.

Whether you happen to be in space or on the planet, the speed of the graphics is never less than zippy. There are some scorching effects, too – if you blow a car off the monorail, it doesn't just explode, it flies off the road and lies on the side, smouldering. In between the missions are animated interludes featuring a mix of detailed

bitmapped backdrops and 3D objects – very effective.

BUT WITHOUT THE SEX

Your craft is fitted with the sort of weapons that would make the Iraqis jealous, but on certain missions only some of them are available. The most basic is yer laser rifle which is pretty pathetic; then you've got yer proton pulse cannon, yer ion beam, photon torpedoes, the neutron Epical laser –

EPIC, OR BLOODY MINDED?

So why the hell did *Epic* take such a terrifically long time to be released then, eh? Well, it's all the fault of that Amoeba games machine. The game was developed on the ST and most of it was finished last December, hence our preview in the January issue. But then the conversion to the Amoeba began, and things went horribly

wrong. There were tons of snags and pitfalls which put back the release date again and again, because both formats had to be released simultaneously. Eventually, though, the Amoeba version was sorted out and the game's now available. Mind you, the game's been in development for a year and half anyway.

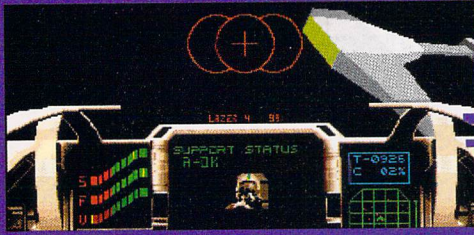
LONG LONG AGO, IN A GALAXY JUST OVER THERE...

As the violence unfolds, there are animated sequences between the shooty bits explaining just what's going on. These are brilliant when you

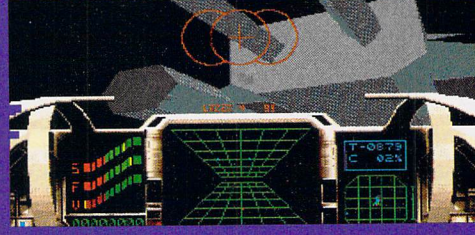
see them the very first time around, but the chances are you're going to want to skip them on occasions after that



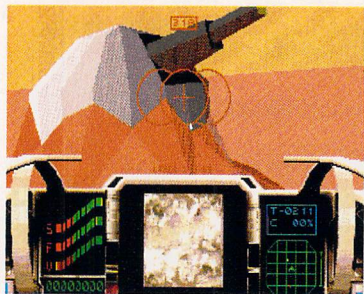
1 Whack up the volume, and shout over the music: "You will not defeat me, Darth Vader, for I am the light side of the force, and anyway you're not my dad." At this point you might be feeling a little foolish. Go and read a book or something sensible like that.



2 Next engage in a vicious battle with the Rexxon fleet. Every time you score a hit, shout "Yes! Got ya, you heinous slime-eating scumbag of an alien sonofabitch!"



3 Finally, see if you can fly through the gaps in your mothership's structure without spreading your ship over its hull. That's when you realise you're out of fuel. Instead of drifting in space like an intergalactic vegetable-like growth, press <Enter> to cheat, then return to step one.



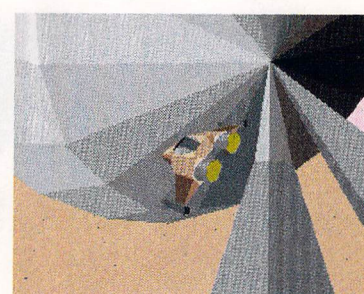
● On the planet of – hang on a second, I'll just have a look in the manual – Grand Lizar? No, that's something else... um... Potead, that's it. Yes, on the planet of Potead, there's this sodding great cannon, you see, but it's nowhere near as hard as it looks. Blast it a few times and it's pink champagne with little umbrellas, cherries and cucumbers all round.



● The Mother of Wars, the objective of which is to – what was it again? – ah yes, “save the human race from total destruction.” I dunno, is it worth it, really? I mean, it's only going to go on sinking ever more slowly into the pit of decadence, with its episodes of *Baywatch* and its 26-part magazines on how Vietnam really was quite fun, actually, now, isn't it?



● [Note: you need a working knowledge of Fry and Laurie sketches to understand this caption.] “Good afternoon, ladies and gentlemen, and welcome to Lords on this marvellous afternoon. Oh look, there's a bus going down Garboldisham Road. A marvellous number 29 bus. Lovely old England. Cream teas! Father's hands on the steering wheel! Honestly, nanny, I never touched it!”



● We really must apologise for the depressing nature of that caption over there, the one about *Baywatch*. It's just that, y'know, sometimes it all gets too much... it all seems so pointless... sometimes you just wonder, is life what you make it? Or is life an abstract term applied to organisms that have metabolism, growth, the ability to reproduce and that respond to stimuli?

which can destroy a city in one blast – and, of course, the Cobalt Salted Anti-matter Doomsday Device, which is used for wiping out troublesome planets – not the sort of thing you take on every mission. The Rexxons don't have all this nightmare technological machinery, but they do outnumber you by four to one. Gulp, in a very real sense.

As mentioned, the Epic has a tendency to run out of fuel very quickly – partly because its defence shields consume such a lot of the stuff. Luckily there are fuel pods and ships hanging around the planets and in space, which can be located and picked up using a standard fuelscoop. The pods are extremely small, though, and you need to spend quite a bit of time just searching for the damn things. You can always cheat and press <Enter>, which gives you all the weapons and refuels you. Oddly enough this cheat is listed in the manual. And while we're on the oddness, the box boasts that “Epic is not

compatible with Mega 4 machines.” Er, yes it is, actually.

VERDICT: Epic is the best blaster the ST has seen for a long time. It's been so long since anyone has bothered to spend the time and effort to put together a shoot-'em-up with quality graphics and sound – and not just some piddling, horizontally-scrolling thing. The satisfaction of wasting wave after wave of scum-sucking alien trash comes flooding back as soon as you see the Rexxon horde. If you don't feel your bloodlust rising when you're confronted with the 1000-odd enemy ships of the Mother of Wars, see a doctor.

The samples could have been a little better – particularly some of the firing noises – but the music is absolutely superb. Almost the entire Mars movement from *The Planet Suite*, sampled and spliced together pretty well, accompanies the intro and between mission screens – whack up the volume

and get that blood stirring. It's the music that *Star Wars* nicked and mixed up a bit, and it suits the game perfectly.

OR EVEN THE HORROR

But it ain't hard. Once you're used to the game, you can play through the entire set of eight missions in a little over three hours. For once, though, this doesn't matter all that much. Unlike *Another World*, which you'd only want to complete more than once if someone had a gun to your head, the sheer satisfaction of blowing aliens out of the sky and off the planet is reason enough to load up the game once again. Besides, you can always set yourself extra challenges, like only using one weapon to complete a particular scenario.

The between-mission sequences, lavish and well-done as they are, quickly become annoying, and, though you can skip them, it would be good to have an option to turn them off altogether. Epic

isn't perhaps the awesome megagame it was shaping up to be, but it does come pretty close. For speed and detail of graphics, only *Thunderhawk* can touch it at the moment. Master it now and you'll be ready for the Falcon version. Now there's something worth getting excited about.

ED RICKETTS

EPIC

OCEAN £29.99

- Epic's only competitor is *Thunderhawk* in terms of style, speed and 3D graphics...
- ...Although DID's own *Robocop 3* comes close, but it's not quite so frenetic as this.
- Samples aren't as good as *Robo 3's*, though the sampled music is exceptional.

STF RATING 91 %

KNOW YOUR ENEMY. KNOW YOUR RIGHTS. NO FUTURE

Er, yo! Now listen up, you guys. Kowalski, stop fiddling with that. Now, these guys are out there to toast your ass, so I want to see blood, I

want to see violence, I want to see *Fire Walk With Me*, but it's not out yet so I can't, I want to see Sheryl Lee naked, I... I'll shut up now



● See these puny little things? They're fighters, they are. And they're crap. I mean, they're just so useless. You can destroy them just by thinking about it, almost. Sheesh



● Now these are slightly harder. That's a Krinder, that is. They have an annoying habit of running away just when you're about to sling a photon torpedo at them. Big bunch of girls' blouses.



● Woaah! Now that's more like it. One of the Rexxon big bastard motherships. As Mark “Look, just because the only film anyone knows me from is *Star Wars* doesn't mean I'm a has-been, okay?” Hamill would say, “Look at the size of that thing.” (Fnarr fnarr.)

PARASOL STARS



Julia Somerville once said in a candid interview, "Hey, that *Rainbow Islands* is pretty good, isn't it?" And, of course, she was right. *Rainbow Islands* was good. So good in fact, that before *Parasol Stars* appeared in the ST FORMAT office, the team was chewing its nails, fretting its nerves, fraying its tempers and making cups of coffee with two spoonfuls of granules and no milk or sugar.

Then it came. And it came complete with a manual explaining the plot. What seems to have happened is that Chaostikahn – a violent habitual offender – has unleashed some baddies over the seven planets that Bub and Bob call home. Our heroes must fight once more, but this time armed with colourful parasols. But enough of this insulating plot nonsense.

The seven worlds are divided into levels, each being one or two screens in width, and one in height. A mildly amusing theme has been attached to each world, and this is echoed in the levels, for example World One is the music kingdom, World Two the woodland domain and so on.

Bub – and Bob, if two-player mode has been selected – wanders around the platforms on each level, poking the baddies with their umbrellas (not parasols, please). This cripples the enemy. Another poke and they disappear, inexplicably leaving some edible item behind for the players to collect. But there are better ways of dealing with



● Casually, with a flick of his frighteningly-coloured umbrella, Bub destroys the grand piano that's been plaguing him for several minutes. If Freud was alive today, he'd be turning in his grave.

the baddies. Water droplets, fire drops, lightning bolts and stars fall from the top of many of the screens. These can be collected on the umbrellas, and can be fired across the screen at the nasties, which kills them.

These two methods of wiping out the baddies and clearing the screens doesn't sound very inspiring, but surprisingly it provides an enormous num-



● Don't they make a lovely couple? (Of what I'd rather not say. Even cute ST animations can initiate litigation against people who call them spineless, sickening little mother's boys).

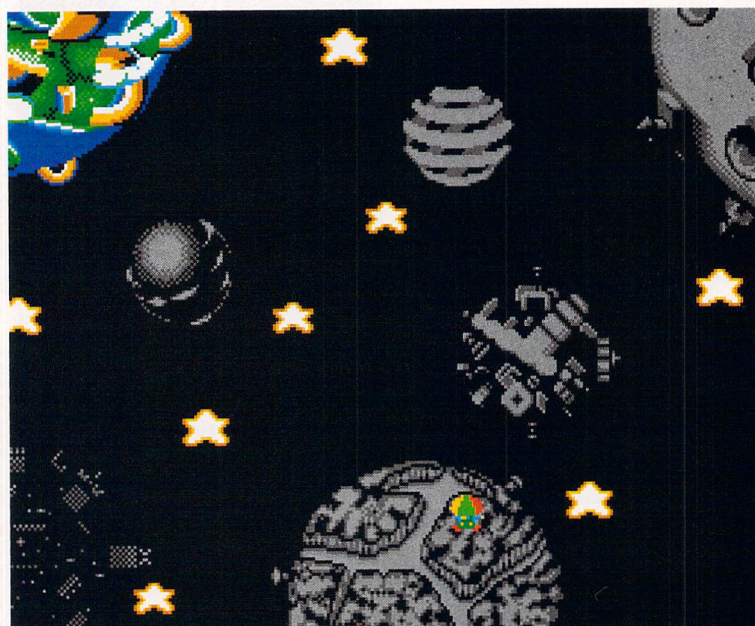
RAINDROPS KEEP FALLING ON MY PARASOL



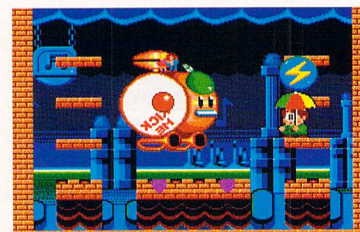
● If Bub waits for five droplets (of anything) to collect on his canopy, one massive droplet is created, which stays on top until he – well, you actually – decides to fire it at something.



● On this level, a tidal wave of water – presumably – is released, which cascades along the platforms and wipes out all the baddies it hits. It's a good touch and shows that there are loads of hidden tricks you can find if you experiment.



● The twins Bub and Bob travel their crazy solar system in *Parasol Stars*. They have to mend each of the planets in turn by poking the baddies with their umbrellas – this gives you an opportunity to go for a wee in between the worlds.



● At the completion of each world, you're subjected to a strenuous fight against some weird programmer's vision of a nightmarish post-apocalyptic traumatised – um, well, I'm not sure what it is actually, since you asked.

with – er, things and it looks and feels absolutely great.

So the graphics are excellent, the sound effects are good and the programming is very high quality. It's also immensely addictive. The difficulty level is set just right, and, once you start playing, you can't stop.

Any gripes? No, except that codes for the different worlds would have been helpful. Overall, though, it's a marvellous arcade game, so go and get *Parasolled*, then wave bye-bye to those going-to-bed-at-night blues.

JAMES LEACH

VERDICT: Oh dear. This description doesn't really seem to do the game justice. You see, *Parasol Stars* is brilliant. It's reminiscent of *Bubble Bobble*, but fortunately has much more going on. The graphics are well up to *Rainbow Islands*' standard and there are plenty of catchy *Bubble Bobble*-ish tunes, too.

The beautifully-drawn and animated nasties follow you around smoothly, and there's never a hint of poor collision detection or sub-standard movement routines. Each screen is packed



● Not raining cats and dogs, but hailing taxis. Okay, so it's not completely true – it is raining cats and dogs, after all. What does it matter anyway? All you have to do is parasol 'em.

PARASOL STARS

OCEAN £25.99

● Like an updated, uprated *Bubble Bobble*, with tons more detail, depth, and something that means playability beginning with d.

● Certainly as good as *Rainbow Islands*, with similar graphics and style. And very, dare it be said, cutesy.

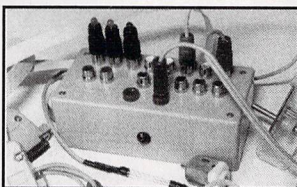
● Can't wait to see Julia's face when she sees this.

STF RATING 91 %

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MICROPROSE

SIMULATION • SOFTWARE

SPACE CRUSADE

It was on a day such as this, in a time long ago, that some dodderly old scientist in a faraway dimension called Blurbland accidentally stumbled on the concept of warp space. This is a region beyond the ken of mankind, where Chaos holds dominion and travellers are at the mercy of time whirlpools and eddies, presumably Waring and Ricketts. The one good thing about warp space is that it enables you to leap from one part of the universe to another while neatly bypassing the larger parts in between, so cheap interstellar travel for the common joe became a reality. The dodderly old scientist was slapped on the back, given a large pension, courted by the world's chat-show hosts and finally assassinated by the military who had already discovered warp space and didn't take too kindly to people shimmering through on day-trips to the planet Oomian when they were trying to use it to conquer the universe on the quiet. It's not too difficult to guess what you're using this twilight zone for in *Space Crusade* but, just as a hint, you're not shimmering through on a day-trip to the planet Oomian.

You are, in fact, the commander of a chapter of marines so tough that they can defeat the dreaded needle-toothed nightmare beast of Cronius V using only a stick and crack walnuts with their cleft chins as an encore. Your aim in life is to ascend the anti-gravity chute of success, from humble beginnings as



● **Choosing your chapter.** We've decided to plump for the Ultra Marines, for although the Blood Angels are acknowledged as the masters of hand-to-hand combat, the Ultra Marines are the only chapter to be named after a shade of blue.

Sergeant to the heady heights and large salary of Captain Supremus. To accomplish this, you have to take on a variety of unpleasant and shockingly dangerous tasks, all of which revolve around the central theme of clumping through a spaceship and shooting things. However, before you can get to business, you have to kit out your crew. First, you choose which of the three battle-hardened chapters you want to command. If you've got a couple of friends lying around, rope them in to take over the others. Alternatively, just pretend and give yourself another chapter for good luck. The possibilities are, quite literally, extremely small. Once you've done this, it's time for a quick shufti around the weapon shop and a short stop at the special equipment emporium to see the hi-tech equivalents of "Get Out of Jail Free" cards, before

entering into the fray.

This involves making your way around a suspiciously maze-like ship, zapping any aliens you come across, achieving your mission objective then legging it back to your docking claw. There are 12 missions to choose from, ranging from those where you plod around and shoot some tremendously sad opponents, right up to the full-scale assault scenario where you have to snatch a top-secret weapon from under the noses of creatures that would more than slightly distress the alien from *Alien*. Moving, firing, hand-to-hand combat and so on are all controlled by clicking on the appropriate icon, then on the equally appropriate marine. The game is played on a crisp 'n' clear 2D plan map, with the combat sequences shown in impressively big but poorly animated isometric 3D. You can switch permanently to this mode, but it makes for one hell of a cluttered screen. In this kind of game sound hardly matters which, luckily, is exactly the excuse that the programmers were looking for.

VERDICT: *Space Crusade* looks like it might be fun right up until the point at which you start playing. The main problem is, everything in the game is totally random. It's all very well to strategically deploy your marines in a manner guaranteed to draw admiring gasps from Uncle George Who Was In The War You Know, but when it actually comes down to taking on the bad guys, everything's decided on the roll of a die.

Why on earth didn't Gremlin take the opportunity to add a proper combat sequence to the game? Watching some numbers spin round, then a short 3D sequence where your marine fires a spectacularly horrible weapon at an alien from point-blank range and



● **Stocking up on weapons is an important part of pre-game preparations.** Be sure to balance heavy weaponry against the lighter, but more efficient, hand guns. Now, would sir like that disgustingly lethal plasma rifle with the fearsomely unstable nuclear power pack in green or autumn lilac?

misses, is not my idea of fun. In addition, if you survive such encounters, you can thrill to the equally random chance of one of your men being caught in a booby trap, or being seduced by the forces of Chaos, or walking into a door or something. Addictive qualities? Lasting appeal? Pah!

Terminal boredom is staved off by the fact you can play with or against your friends – the best scenario has you pitted directly against each other – but then there's little point in not buying the board game instead. Plus, with that, you can play the aliens. On the whole, a tepid and unsatisfying little number.

JON PILLAR

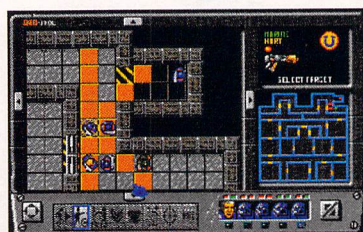
EAT PLASMA

Not everyone's cup of tea, wargames – all that strategic thinking and tactical stuff. Then there's the fortunes of war to deal with – those unexpected wildcards that thwart the best laid plans. *Space Crusade* is classic small scale wargame with plenty of sexy hardware and dribbling aliens. No joystick skills need, no timing

your jumps or frantic button pressing – just brains and a spot of luck. Taking your team of battle-scarred marines into the warp zone for a spot of forces-of-chaos bashing is jolly good fun, if not slightly dangerous in a sort of imminent death way. It's an almost direct copy of the original boardgame and a rather good game it is, too.

Alternate *STF* Rating – 78%

CHRIS LLOYD



● **It's the start of the game and already you're in trouble.** Corporal Stanley Pimlico, in his haste to blow up an alien, has accidentally targetted three walls and Private Smoot. Meanwhile, Commander Pudding just hides his face and sobs.



● **When one of your chaps gets blasted, all that remains are his smoking boots.** I suppose it's the *ST* game equivalent of the vicar coming round unexpectedly when the au pair's ironing your trousers.



● **In *Space Crusade*, danger lurks around every corner.** Come to think of it, the corners are pretty dangerous themselves.



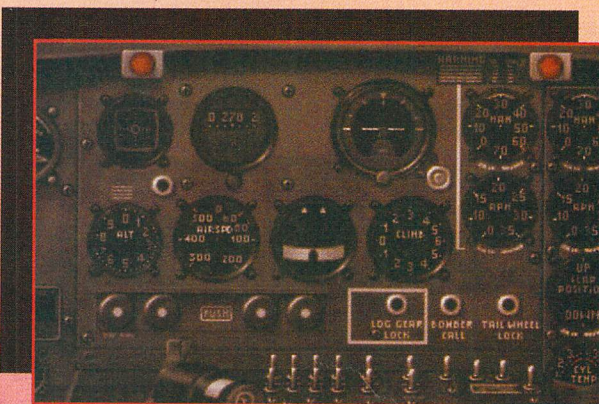
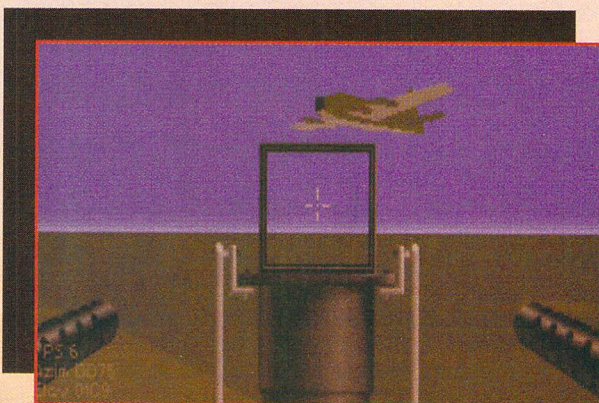
● **The element of surprise is vital in any encounter.** Here, Corporal Pimlico has got the drop on his foe by impersonating WC Fields and singing *I Tawt I Taw a Puddy Tat* in an obscure Cantonese dialect.

SPACE CRUSADE

GREMLIN £25.99

- Looks good and has the appearance of great depth and cunning, but the gameplay is sadly lacking.
- You can only save your commander's status in between missions – not the state of play itself.
- A bad run of luck could mean the whole game's over in minutes.
- Does the job of a plastic die slightly less efficiently.

STF RATING 50 %



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WIZKID



"Expect the unexpected," they said. "Be prepared for all manner of motley monsters, itinerant chamois leather cloths, small-minded fungi, belligerent turtle crofters and bloody minded sky writers." But this, this, this was what they gave me? Andy Hutchinson passes out artistically from the strain

Much longness ago there was a super game called *Wizball*. It came out shortly after Sam Tramiel had shooed the ST out of the lab and onto the shelves of Comet. It was a stonking game which was fast, fun, addictive and ten quid. *Wizkid* is the long (long) awaited sequel and it features Mr Ball's son, *Wizkid*.

Mr and Mrs *Wizball* have been captured and taken off to an island. *Wizkid* – being a caring '90s kind of chap – would obviously like to rescue his folks,

so he decides to get to the island. Unfortunately, however, he's going to need the services of some cats who can row him over the sea. All of which goes to prove that programmers are mad, sad and largely strange chaps who should seek medical help as soon as possible.

Wizkid is a platform-cum-puzzle game set over nine levels or worlds. Each world has a different set of puzzle objectives based on a frenzied collect-'em-up where the sole purpose is to get as much dosh as you can. To get dosh



● To accrue money you've got to bounce any of the moveable objects on-screen (in this case, the Yin Yang symbols) off the creatures' (in this case, bees') heads.

you need to bash creatures over the head with the objects that litter the screen. For example, on Level Two you find yourself lobbing TVs at penguins.

Occasionally, after you've bashed a creature, a collectable item appears, such as a power-up or a colour pot. Each colour pot you collect goes towards filling in a bar of music at the top of the screen. If you complete the tune, you finish the level. Finish the level and you can move on to the puzzle section where you can spend your money buying objects to release a cat.

UTTERLY WEIRD, MAN!

Not really, the shop/puzzle screens are when the game gets really weird. Here the idea is to spend the money you accrued on the collect-'em-up screens on fancy goods. Don't expect a huge choice of potential purchases – there are usually six options, one of which is invariably a hidden screen.

Nope, what you can buy are objects like carrots on sticks, can openers, newspapers and red-tint specs, although there's usually a humble token

GREAT CATS DOWN THE CENTURIES

- 1 **Felix.** Only available in black and white, but his bag of tricks has never been surpassed.
- 2 **Top Cat.** Whose intellectual close friends get to call him TC. (Emm, providing it's with dig-ni-ty?)
- 3 **Tom.** Much maligned friend/fiend of Jerry.
- 4 **The Esso Tiger.** An endangered species used as the emblem for a global petrol company that consumes masses of non-renewable resources?
- 5 **Henry's Cat.** Badly drawn, but lovable nonetheless.
- 6 **Arthur the Kattomeat Cat.** High society moggy with a dreadful taste in collars.
- 7 **Puss in Boots.** Pantomime favourite usually played by that one out of *Blue Peter*.
- 8 **Pussy Galore.** A really cool cat and friend of 007. (Running out of ideas now...)
- 9 **Cat Stevens.** Islamic dude who created the unforgettable album *Teaser and the Firecat*. (Scrape that barrel.)
- 10 **Cat Weasel.** Lovable (*Snip! Ed*)

WIZKID'S ADVENTURES IN TOILET LAND



1 Once upon a time, *Wizkid* chanced upon a lovely wooded glade with a big spooky cobweb, a well and a horizon of pretty orange mountains.



2 "Hmmm..." *Wizkid* thought to himself. "I wonder what would happen if I jumped up and down on the handle of this well." So he did, and, as if by magic, a bucket appeared.



3 He hopped into the bucket and, unsurprisingly, plummeted straight to the bottom of the well with a look of extreme panic on his green face. Fortunately, there were some toilets down the well, so he decided to relieve himself.



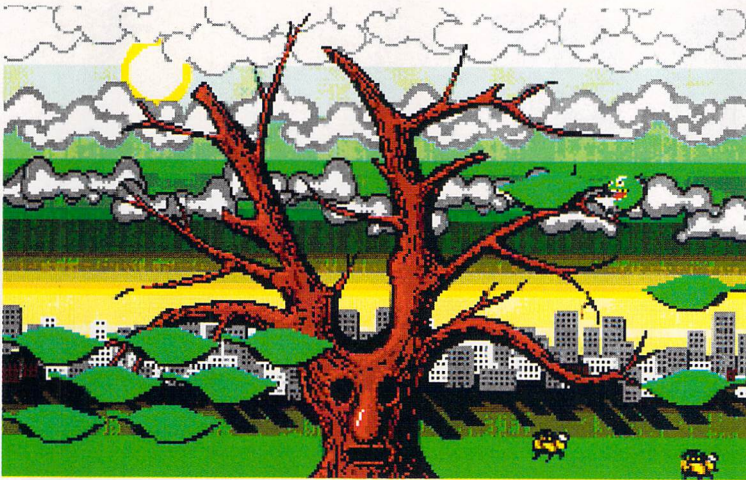
4 Out in the open air he noticed a bell. Being an inquisitive kind of guy, he rang the bell and stood back with a nonchalant air about him, waiting for something to happen.



5 As if by magic, a door dropped down from the heavens. Plucking up his courage, he opened the door and leapt back as a huge Doberman started yapping in his face. He quickly slammed the door shut and sat down to think.



6 He had to get past the dog, but how? Then it came to him in a flash – he pulled the red balloon to summon the shopkeeper and bought a newspaper. He pushed this through the door, waited for a few seconds and then gingerly opened the door again.



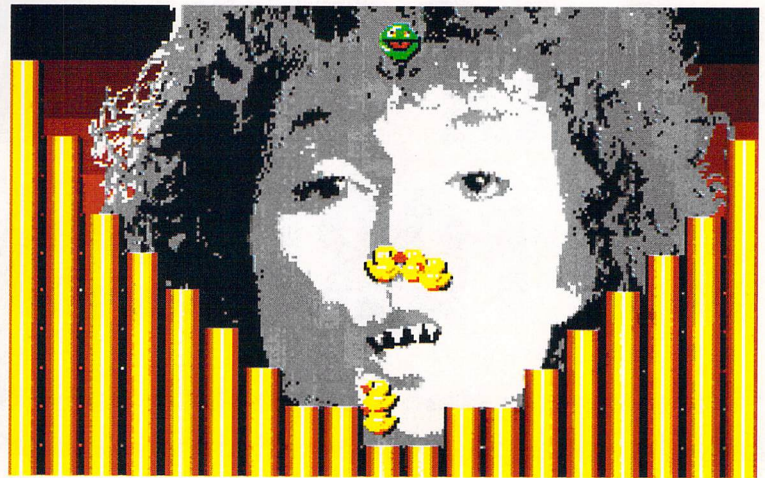
● Wizkid has some teeth now. This enables him to hold objects in his mouth and throw them around the screen at the wee timorous beasties.

or star on display as well. These lovely goods can then be used to try and reveal the cat who is hidden somewhere on the screen.

As you wander around the puzzle screen, an icon labelled "clue" blinks on and off in the top right corner on the screen. The odds are that you're near a clue and should stop jumping around and press <Fire>. An inventory of the goods you're carrying around appears and, if you've got the right one, a new section of the puzzle screen opens up. If you haven't got the right item, it's

back to exploring the screen. If, however, you don't have enough dosh, you've got to get back to the collect-'em-up section for some more penguin bashing.

Solve all the puzzles and your reward is a lovely tabby cat. Grab it quick and you can depart for the next island. To complete the entire game you've got to better the game worlds Sunset Wizovard, Ahoy Wiz Maties, Mount Wizimanjaro, Elementree My Dear Wizkid, Ghost of Wizkid Past, Wizkid and the Wizball Mystery, Wizkid



● This girl's a real howler, but we refuse to be drawn on whether her bark is worse than her bite. Probably is, though, since she seems to be missing half her teeth.

goes to the Circus, Wizkid meets Dog Girl and Jailhouse Wizkid. Not easy.

VERDICT: Courgettes. Or to put it another way, strange, strange, strange, compulsive, strange. Yes, indeedy, Jeff Minter's games look positively sane compared to this. In fact, it's so odd a brand new genre needs to be invented just to pigeon-hole it properly. So, henceforth let the world know *Wizkid* as the first ever cat-'em-up. Hurrah!

Gameplay is what counts in any game and *Wizkid*, it must be said, has

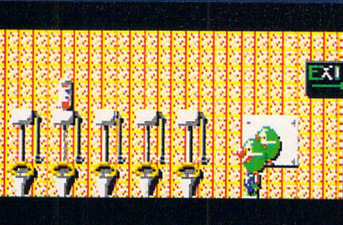
oodles of it. It's difficult to get bored – one minute you're lobbing packets of peanuts at penguins and the next you're bouncing boulders off duck's heads. More to the point, there's a lot of skill involved in controlling little *Wizkid*. Learning how to bounce objects off walls and onto the creatures is fairly instinctive and helped by the power-ups which appear. These completely alter the gameplay – so getting the right kind of colour or power-up comes down to skill rather than luck.

Because of the weirdness of *Wizkid*, the scene changes every couple of minutes and there are plenty of sub-games thrown in for good measure. *Wizkid* lends himself to some truly peculiar uses. One minute he's bashing his head on the rocks, the next he's a spaceship violently shooting at waves of aliens, then he's riding around on the back of a donkey.

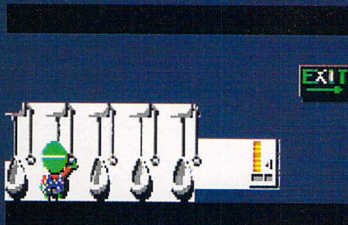
The game is fast moving and (shock, horror) actually requires a modicum of intelligence from the player. The graphics are bright, wacky and massively intrusive while sprite movement is slick and fast. All this adds up to a good-looking, fun game which you can play all the way to the end and then still load up on the occasional whim for a quick blast. In closing, thanks go to Lionel Lump for supplying the mastic asphalt spreader.

ANDY HUTCHINSON

The first level of *Wizkid* requires a considerable amount of lateral thinking. The idea is to catch a cat. Most of the action revolves around toilets and contraception machines, oh and the occasional donkey...



4 Daringly, he wandered into the Ladies' first and found a near new can of Pepsi. Ignoring one of the prime rules his mother had taught him (don't take half finished cans of Pepsi from toilets), he decided to take the can. He thought it might come in useful.



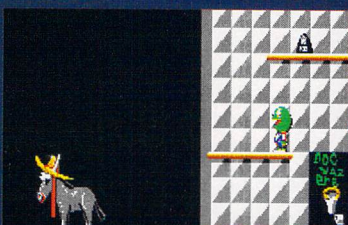
5 He left the Ladies' and entered the Gents'. Ignoring the chewing gum machine on the wall, he chose a urinal and had a wee-wee. Unfortunately, it was broken and water gushed from the pointy front bit.



6 Quick as a flash, *Wizkid* legged it out of the Gents' and hopped back into his bucket. It floated gently up the well towards daylight.



10 Mr Doberman was happily sitting on the bog having a good read of the newspaper. In fact, he was so happy that *Wizkid* slipped past him through a temporal time/space distorting cistern into a new dimension.



11 He found a weight lying on the floor and picked it up. Moving up the screen, he discovered a secret hatch activated by weights. He placed the weights on the ground and found a button which summoned a donkey.



12 "Hurrah," thought *Wizkid* as he bashed his way through the roof of the loo. He leapt onto the donkey's back and tried to get it going. It stubbornly refused to move, so slapping his thigh at the fore-sightedness of it all, he lured the donkey with a carrot on a stick. The donkey galloped off and he and *Wizkid* went on to have all sorts of brilliant adventures.

WIZKID

OCEAN £25.99

- Utterly mad and extremely original game.
- Addictive, well executed gameplay with stonking graphics.
- Bags of lasting interest – addictive until completion and addictive thereafter.
- A truly '90s kind of game, crammed full of childish bottom humour and schoolboy japes.
- Definitely one for the collection.

STF RATING 92 %

ISHAR – LEGEND OF THE FORTRESS



“Once upon a time the inhabitants of this land lived in peace and harmony under the wise government of the elves. Then there came a dark warrior whose name was whispered in dread. That name was Kevin, and he did steal all the chocolate biscuits and insist that every day be called Tuesday.” Chris Lloyd sets out on a quest to rid the land of the remaining Hobnobs

You have to admit that the plot is complete and utter drivel. Another piece of middle earth Tolkienesque adventuring wibble about ridding the land of a nasty piece of work who's gone around ruining everybody else's day. As usual, there's no great army of warriors in delightful shiny armour to help. It's down to you, one lone hero armed with a length of steel, a small bag of gold and nothing else – not even a smart shirt for best, apparently.

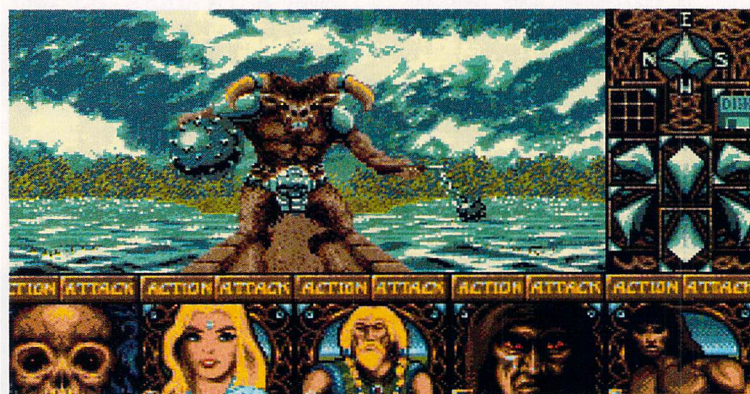
Ishar is another bash at the classic Dungeons and Dragons™ formula: plenty of mighty warriors, mythical wizards and ravaging princesses. The initial plot may be uninspiring, but who cares about a minor thing like that? It's just an excuse for a good jaunt around the land clobbering things and collecting the goodies. Along the way you can recruit up to four other homicidal loonies to join you. You all then get to tackle a different selection of homicidal

loonies, traitors and invisible things, disguise yourself, fall in and out of love generally having a thoroughly groovy time of it all.

IN THE NAME OF FREEDOM

Ishar can be played entirely with the mouse or a combination of keyboard and mouse. Once you get used to the keyboard shortcuts, using them is much faster. There are the full complement of role playing game bits – magic spells, potions, strange runes and weird monsters.

Each character has a full set of statistics and skills which improve as you gain experience. Dotted around the gaff are villages and cities where you find friendly shops, training centres and wise old men handing out advice on the state of the world. Standing in the way of the final confrontation with Krogh is the inevitable array of baddies. As any good adventurer would, you react in the standard way – you kill them and steal



● One of the many slight problems you come across – manical monsters doing their damndest to inflict great physical pain on you. This mad cow's bonce can take a hell of beating as well as dish one out.

all their money – and all in the cause of freedom, of course. There are a few puzzles to figure out and quests that you've got to complete before the final assault.

God pops in early on, – well, one of his messengers anyway – to hand out

three quests all of which involve great personal danger. Funny, isn't it – they never let you do anything easy in the middle earth, do they? Like just popping down to the shops for a spot of grocery shopping or doing the washing-up or anything simple like that. No, you've



● Some of *Ishar*'s less pleasant inhabitants accost you in a small birch glade and insist that you examine the quality of their bridgework.



● No self respecting adventure is complete without the ubiquitous tavernful of real men drinking real beer and having real man-to-man relationships. Better throw in a woman dressed – for no particular reason – in a bikini. Otherwise it might look a bit suspect.



● The inventory screen for managing all your stuff. Bottles of rat brains, salamander oil and a collection of sharp objects.

MAGIC BROTHERS AND MYSTIC SISTERS

Ishar – land of opportunity for all budding heroes. All that is required is bravery bordering on the suicidal, ruggedness bordering on the unnat-

ural and a dress sense bordering on the ridiculous. Have a look around this screen and you can see all the things you can play about with

Main window – first person view of the land of Kendoria in all its glory. Here we are in a small village where some friendly war-dogs are acting out a quaint local custom by ruthlessly slashing you with their claws while whistling *Greensleeves*.

Action and Attack – not the title of a new cop partnership at all. Clicking on Action brings up a menu of goodies including giving first aid and casting spells. Attack does pretty much what you might expect with a grunt and swishing noise. Anything standing in front of you gets the benefit of a good bashing with whatever weapon you're carrying in your hand.

Your adventurers – you start off with the usual lone hero stuff, but along the way you can recruit all sorts of suspect characters. Below the mug shot is your vitality bar – if you let this hit zero, your character cashes in their chips. Click on the Bods moniker and you zap to their inventory screen.



Extra bits – click on a bod's visage and up pops a little box showing you what he's got in his hands and whether any spells are casting their influence on him.

Area – the part of the world you are currently wandering around in causing havoc.

Compass – toasts bread beautifully, too.

Save and Load games – every Save you do costs a 1,000 sobs, so easy does it.

Tactical disposition – click on this and a little 25 square grid pops up where you can adjust the relative positions of your party. Hunky barbarians to the front, now.

Movement – these send your party tramping around the shop collecting treasure and interacting with the locals in an – er, enthusiastic manner.

Character stats – click again on a character's box and you can bring up a few of his vital role playing stats: physical, mental and financial condition as well as experience earned. You get the experience for the usual reasons – inflicting violent acts on things and nicking stuff.

always got to tackle some great hairy brute or other.

IT'S SOOO GORGEOUS

The gameplay is well thought out and well implemented. The only drawback is the speed – switching screens and travelling about is slow, so there's a slight delay when you do anything. It takes a while to get used to the slightly sluggish feel of things, but this is made up for by the brilliant graphics – everything looks gorgeous. There are 32 colours on-screen and they've been well used.

It sounds good, too. There's a constant soundtrack of sampled effects – whistling wings and chirping birds in the



● A pleasant surprise is Ishar's ability to run in super-crisp high resolution. Not a lot of people knew that.

forest, lapping water and frogs by the sea and eerie moans and wails under-

ground. Each monster has its own brand of screech and yelp, too. *Ishar* looks and sounds stunning.

VERDICT: When you see the lush introduction, you know you're in for a treat. If you are an aficionado of the orc 'n' elves genre, this is for you. It's not the most complex of plots or the most interactive of games – everything is hackneyed and a little simplistic – but it adds up to a belter of an adventure. If you've avoided this genre of game before, you've missed out on lots of classic games. While there's nothing radically new in *Ishar*, it's a highly polished state-of-the-art version of an old favourite. Highly recommended.

CHRIS LLOYD

ISHAR – LEGEND OF THE FORTRESS

DAZE £29.99

- Better sound and graphics than any RPG you care to mention.
- Slower than *Dungeon Master*, which can get a bit frustrating.
- Once you're hooked, you're going to be in for a good few late nights.
- Adds nothing new to the genre – just does it all better

STF RATING 90 %



● "Ah, now – er, when we said, "Go to hell," we weren't really referring to you. Actually, we were talking about that little bloke behind you, who – er, seems to have disappeared now. You're alright, mate, honest."



● The mighty city of – er, something or other. Looks rather deserted. Wonder if the locals in that pub are grumbling about the state of the country since the evil one took control? Yep, they are.

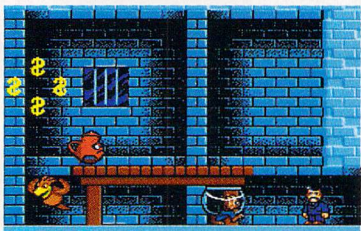


● The graphics in *Ishar* are some of the best you can see on any ST game – mighty oaks, lush green grass and dainty flowers. Don't let the barbarians catch you musing on nature though, 'cos they'll only laugh. Does the one on the right look like Jim Morrison or what? And what's that girlie doing in the party?

THE ADDAMS FAMILY



● Gomez, he of the cigar and the unnecessarily prolific eyebrows, contemplates entering the spooky old tree that grows in his garden, but decides instead to go inside and make a few more amusing jokes about the other members of *The Addams Family*.



● Never trust a fishbowl with legs. Not only do they need changing once every week, they get drunk at parties, fall over and make a mess on the carpet.



● With the flying fez on his head and a trail of starry things coming from his bottom, Gomez hovers impressively above the rotating skull and taunts the crap rabbit mercilessly.

Poor old Charles Addams. First he's gratuitously abused by that noticeably chuckle-free '60s series which makes BBC2 think they're hideously trendy by repeating it, and then his creations appear in a hyped-up-to-the-gills '90s film with about as much style as *Batman*. Finally, just to make him rotate in his grave, his name is forced to appear on this Ocean licence.

Anyway, we can ignore the TV series and the film, because they bear no relation to the game at all. *The Addams Family* is a purebred platform game which bears not a little resemblance to that of a certain blue hedgehog. Say no more.

The plot is something vaguely like this: Gomez, who's the nominal head of the family, has to rescue the other no-hopers from various locations around the Addams' house. Each of them then nips back to the music room and contributes a bit of a tune, which Lurch then plays on the piano. What a good laugh, eh?

The game's split into sections according to the division of the rooms. Each "room" – games room, portrait gallery, kitchen, and so on – actually comprises around 40 or 50 screens with a particular theme. There are some outside bits and pieces too, like a hollow tree and the conservatory. What you have to do is to bound around these screens, stomping on nasties' heads – the only way to kill them – and work your way through the labyrinth of screens to find the particular hidden family member.

This would be all very well, except that some bright spark decided it would



● This here is the Music Room. Isn't that Meryl Streep on the right? Such an absolutely marvellous actress. Don't you think she was just so convincing as Angelica Huston in the film? Lurchy plays some suitable tune on the piano while Thing makes incredibly offensive gestures using just his thumb and forefinger.

be a good idea to make a press of the <Fire> button perform a jump. This can be very confusing when you're working on instinct and you push up rather than hit <Fire>.

Anyway, along the way you can collect extra lives and energy and groovy little bonuses like the flying fez – which enables you fly, believe it or not – invincibility gizmos and magic trainers. Cash is also on offer – get enough and you get an extra life.

VERDICT: Viewed as a straightforward platform game, *The Addams Family* is quite a decent effort. It's slick, bland,

well-programmed, large, not too difficult, and the graphics are excellent. The daft control system is a bit off-putting at first, but it's easy enough to learn to live with.

Viewed as anything remotely to do with *The Addams Family*, it's not much cop. The setting really doesn't matter at all – this could be any platform game, and the characters in it don't rely on any special Addams characteristics at all, except for looking (vaguely) like them.

So it's pleasant enough game, but why have Ocean bothered with the *Addams* licence? Why not do this as a standalone platformer and use the *Addams* name properly? It's the same old syndrome of a wasted licence. Buy it if you appreciate platform games, but not for any other reason.

ED RICKETTS

THROUGH THE KEYHOLE

"Now who do you think would live in a house with huge menacing knights sporting big whirly things you have to avoid? Could it be Dennis Taylor? Perhaps Paul Squires, impressionist of yesteryear?"



● They might look menacing, but... alright then, they *are* menacing, but you can get past them by nipping under the mace just as it swings by.

● Then – er, do it again. You can try to collect that cash on the table, but it's not really worth the risk.

● And so on and so forth. Secreted somewhere in each level is a big wicked guy – kill him and you can have yourself another heart.

THE ADDAMS FAMILY

OCEAN £25.99

● A little bit like *The Blues Brothers* and *Titus the Fox*, only it's not about foxes or cult film heroes, so perhaps it's not like those games at all.

● Come to think of it, it's not much like *The Addams Family* either, but then that's film licences for you.

STF RATING 74 %

IRICOH PCL5 LASER PRINTER

Ricoh UK Ltd is part of the worldwide Ricoh Group of companies, originally established in Japan, in 1936. With a turnover of over \$5 billion and 37,000 employees, Ricoh has been producing computers and peripherals since 1971 and are the world's second largest manufacturer of Laser Printer engines. Ricoh have employed their expertise to produce a 'first' in laser printers for the world market, the LP1200 with FLASH ROM.

Fully HP LaserJet III™ compatible, the new LP1200 employs industry proven laser technology. Unlike LED page printers, which use light emitting diodes, the LP1200's laser lightsource, focussed by high quality lenses, is able to produce the most accurate and intense printed images. It has 2Mb of RAM built-in and requires no additional RAM to print a full A4 page of graphics at 300dpi. Its fast, efficient processor and engine, together with a straight paper path design, allows printing at a full 6 pages per minute. Unlike its competitors, this advanced laser engine enables the LP1200 to address a range of print resolutions up to 400dpi. A new driver will soon enable the Ricoh LP1200 to print at 400dpi from Windows 3 (2Mb RAM upgrade required).

Again, unlike the competition, the LP1200 includes a powerful document description language as standard. This language, 'LAYOUT', offers unique opportunities to develop custom-made printing systems. Forms and document templates can be designed and stored electronically in the LP1200's FLASH ROM, alleviating the need for pre-printed forms!



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See how the Ricoh LP1200 compares to its Laser Printer Competitors

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Official RRP	£945	£1,179	£1,099	£1,195
Maximum resolution in dots per inch	300x300	300x300	300x300	400x400
Windows 3 Driver @ 400 dpi (July)	-	-	-	YES
Print Speed	6ppm	4ppm	4ppm	6ppm
Straight Paper Path	YES	-	-	YES
PCL 5 Printer Command Language	-	YES	YES	YES
HP-GL/2 Vector Graphics included	-	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES
Full A4/300 dpi graphics with standard RAM	-	-	-	YES
Warm Up Time	<45 secs	<60 secs	60 secs	45 secs
First Page of Text Output	<20 secs	<40 secs	34 secs	<15 secs
Document Description Language included	-	-	-	YES
Flash ROM	-	-	-	YES
Upgradable Firmware	-	-	-	YES
IC Card Slot	YES	-	-	YES
Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	8
Resident Bit-Mapped Fonts	11	14	14	14
AGFA Intellifont Scalable Font Technology	-	YES	-	YES
HP LaserJet III Emulation Included	-	YES	YES	YES
EPSON FX Emulation Included	YES	-	YES	YES
IBM ProPrinter Emulation Included	-	-	YES	YES
Standard Tray Capacity	100	70	100	100
Protective cover on standard tray	YES	-	YES	YES
Cost per copy*	1.65p	2.00p	1.71p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-157
Ability to print on OHP Film	YES	YES	YES	YES
Ability to print on card (157gsm - Manual Feed)	YES	-	-	YES
Auto Sensing on Parallel and Serial ports	YES	-	-	YES
Standby - Noise Level	<40dB	31.7dB	<35dB	<38dB
Printing - Noise Level	<50dB	43.3dB	<46dB	<48dB

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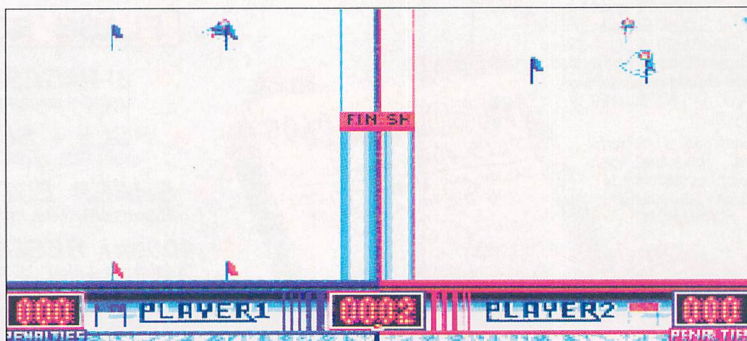
WINTER SUPER SPORTS '92

People in cold countries hate the Olympics because it is dark nearly all the year round, and no one can go out except with tennis rackets on their feet and specially-shaped noseguards.

So, with a stroke of genius, the Winter Olympics were invented. This required no heat, little light and the participants could wrap up cosily and place warm potatoes in their trousers without causing drugs scandals.

Winter Super Sports '92 enables you and five other cold-blooded chums to play up to eight ice and snow orientated events against each other and the clock. These events range from the quite-useful-if-you're-caught-in-a-snow-storm to the very-silly-unless-you-work-on-a-farm-in-Finland. Here are the events, if you're still interested:

Downhill Skiing. Here you – er, ski down a hill. It sounds easy, but the hill boasts several obstacles en route, like glaciers, rocks, trees and people who cheer your perilous descent. You steer left and right to avoid this lot at the



● **Herbie heard an ancient Swiss battle-cry as he sped past. "Why do they always shout that?" he wondered. Then he crashed and died from multiple injuries. Only one of the many dubious pleasures in *Winter Super Sports* from Flair.**

same time as trying to keep your speed up. The screen is split to show how your opponent is doing – unless you're in direct competition when you race on the same piste.

Bale Jumping is next. This explains that ridiculous Finnish farm reference. You must swing your arms and skate around an oval track, jumping over reasonably pointless bales. The arm-swing-

ing is carried out by carefully timing your joystick lunges – too fast and you lose the rhythm then grind to a halt, and too slow and you skate, um, too slowly. You hit <Fire> to jump the bales – and dead easy it is, too.

Now comes the **Bobsleigh**. Here you pilot a carbon-fibre bath tub down an icy tube, gibbering in fear. You've got limited steering as well as a brake,

and there's a 3D view of the run as you desperately haul on your joystick, trying to stop the bob tipping over and causing you to slide on your face for a third of a mile.

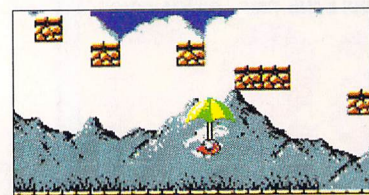
After a quick trip to the face-rebuilding clinic tucked away in the mountains, it's time for the **Giant Slalom**. Only people over seven feet tall are allowed to enter (no, no, don't worry, that's just a little joke). This is like the Downhill, except that the flags are positioned in jolly unkind places – and sometimes they go between your legs, too.

The **Luge** comes next. A luge is basically one of those Abdomenizer things with a waxed bottom. You lie on it on your back, looking forwards so you can watch your feet zing along the icy track at 70mph. It's a thrill second only to travelling down the Pennines on a rollerskate. It's also very similar to the Bobsleigh.

Once you've stuck together your compound fractures and placed your dislocated limbs into the holes they

CARTOON COLLECTION

This compilation of five cartoons – is – er, a few games bunged onto a couple of disks. This is what you get when you stick them in the drive. One at a time, don't forget...



● **CJ the elephant bounces lightly from platform to platform, stomping on the frogs and snails who thoughtlessly get under his feet. Back to the circus!**

CJ'S ELEPHANT ANTICS

Let's start here since this is the best game – if only because it's different to the others. You leap between platforms shooting assorted wildlife which turn into cakes and bananas. You should ensure that CJ eats these since they keep him healthy – you know, a shiny coat, bright eyes and a wet trunk. Umbrellas, though, are what make this game really special... your elephant has an endless supply of these which, when you carelessly drop him off the edge of a platform, he opens to break his fall.

SEYMOUR GOES TO HOLLYWOOD

Superstar – apparently – Seymour gets lost in the maze of studios in Hollywood which hinders his efforts to get his latest blockbuster into the

world's cinemas. You have to start this process off by finding the scripts, along the way solving puzzles using objects you have found in the incredible labyrinth of studios. The graphics and the humour are the best bits about this – the skeletons of Seymour you get when you try to cross the road outside the studio and his attention-seeking antics with his sunglasses when you hesitate for too long, for example. Sadly, you die incredibly easily.

SLIGHTLY MAGIC

You have to rescue some princess-type who's ended up with a sunburnt dragon. This involves the usual challenge of finding objects and using them to solve puzzles. Spikes and ghosts are the order of the day here, as are the faintly more unusual starving rock monsters who you can't fool into believing water is actually nourishment. Your magic powers are fortunately greater than your powers of persuasion, and these can



● **If you don't get very far with *Slightly Magic*, don't get too upset, after all, every time you lose a life, a rather tacky message with a helpline number pops up, complete with the price.**

be increased by collecting stars, helping you along your way.

SPIKE IN TRANSYLVANIA

Hagar the Horrible – oops, Spike the Viking – has to rescue his shipmates from a transylva-

A SEQUEL-THEMED COMPETITION

Video frenzy! Game frenzy! Those ultra nice people at Empire have got together with the not nice people at STF to bring you a remarkable compo – over £700 worth of *Aliens Special Edition* and *MegaTraveller 2* gear on offer

There's something missing in your life, isn't there? Something you can't quite put your finger on. Well, we know exactly what it is. What you need in your life right now is a video – but not just any video. A video of *Aliens – The Special Edition*, the recently-released "director's cut" of the classic sequel, with 17 extra minutes of the film restored, which normally retails at

£12.99. No? Fancy a copy of *MegaTraveller 2* instead, the bigger-better sequel to the seminal *MegaTraveller*? Course you do, my son/daughter.

Just in case you don't know, *Aliens* tells the story of Ripley, the only survivor from the first film, who returns to the planet where she first encountered the alien. She's been in hypersleep for

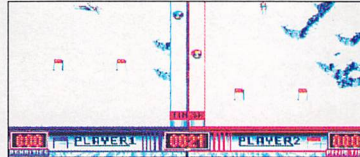
57 years, and now the planet is completely colonised. When Ripley tells them about the alien no one believes her – until it, and its family, start to appear... coo. Even if you've got the original video, you'll want the *Special Edition*. The extra 17 minutes includes some new plot twists and incredible revelations, some mind-blowing effects, stupendous acting, unbeliev-

able and incredible, it's like nothing you've seen before, it'll blow your mind! (Well, it's quite good, anyway.)

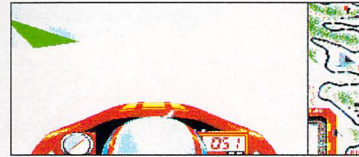
As for *MegaTraveller 2*, well... what can we say? It's an RPG par excellence, with 100 named and detailed worlds to visit, 500,000 square miles of terrain to explore (like starports, ancient sites, casinos, taverns and cities), 35 careers to choose



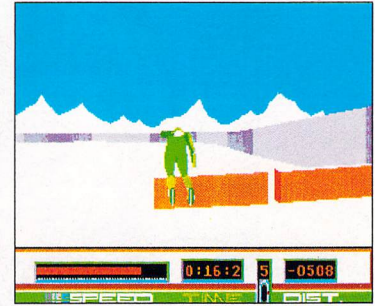
● **Ha! This is so easy I'm doing it with one hand tied behind my back!** (Publisher's note: speed skaters always do it like this, actually. James was simply attempting a pretty terrible gag which didn't quite come off.)



● **With no regard to his already-fractured legs, Toby Sponge set off confidently down the black run. But seconds later, ominous splintering sounds from a region below his waist brought him to a slithering halt.**



● **"It was kind of Bob to lend us his sleigh, wasn't it Martin?" "Mmm. Otherwise we'd have run the risk of skinning our elbows and knees on the hard-packed ice, Julian. And that's despite the protective clothing!"**



● **Bale jumping was invented in America where prisoners were allowed to flee across the country, pursued by Lee Majors in a brown truck with knobby tyres. But it's not on anymore.**

came out of, you can try the Speed Skating. This is simply Bale Jumping without the bales. And as you spin around the featureless track you start to miss those cheeky stacks of hay...

No time to lose now – it's nearly lunch and the light is fading. So quickly get the old skis on – or the new ones if you've brought them – and waddle across to the Ski Challenge (as if things haven't been challenging enough for you or your doctor already). Here you and another competitor race on the same piste. This inevitably leads to vying, jostling, screaming and dampening the lycra as you hurtle cliffwards and your opponent slides over the line, radiating thick smug.

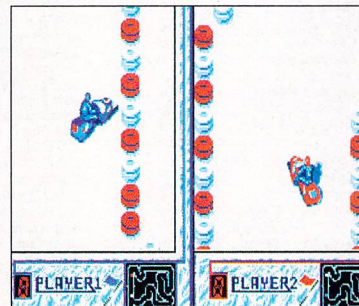
Now it's time to drag your maimed and bleeding carcass to the final event, the Skidoo. At least you get to sit

down, anyway. It's yet another split screener, with a tiny portion of a course shown on your side of the screen – and the same for your opponent. Pressing <Fire> moves the machine forwards, and wobbling the joystick left or right makes a notional attempt to steer the skidoo round the tyre-edged corners. You soon learn that riding a skidoo is not for those who wish to change direction (ever).

VERDICT: There are four types of event here: skiing, sledging, skating and skidoo. Each game is a variation of one of these. They're all fun but none are special. The whole program, though, is rather slick, and, as long as you don't expect earth-shattering graphics, astonishing speed and unlimited gameplay, you should have a good

time. It's at its best with five other people to play against, especially if they're swarthy Mediterranean types.

JAMES LEACH



● **"No, mate. This is the Kwikfit warehouse. We got Pirellis, Michelins, Firestones and dodgy East German retreads. But if you want the skidoo track next door, it's next door."**

WINTER SUPER SPORTS '92

FLAIR £25.99

- Eight sports, but only four different games.
- It's presented better than *International Sports Challenge*.
- But doesn't have the abundant variety of same.
- Six players can take part – certainly more than you could fit in a Mini Clubman.

STF RATING 71 %



● **Has anyone told Dizzy about the potential dangers of ultra violet light? I don't know, standing around in the heat of the midday sun, it's not really very healthy.**

nian castle – another find-the-objects-then-use-them-to-solve-the-puzzles effort. If you're doing a study of ST games and the appearances of

ghosts therein, the least you could do is look this one up – it must rate a mention as the game in which ghosts can kill you the fastest.

TREASURE ISLAND DIZZY

Don't worry about the history behind this particular omelette, by now it must be obvious that you have to get this bouncing egg off the island you've got yourself stuck on. You do this simply by escaping or by collecting gold coins which drags the game out a bit longer. The way in which you do this is already obvious if three out of the other four games are anything to go by. There's an interesting little diversion in there though, where your joystick works in the opposite direction to that which it should. Well, it all adds to the entertainment value, doesn't it?

VERDICT: Buy this only if you're under ten years of age, if your attention span is no longer than ten minutes, if you're hopeless at memory games where you have to remember the attributes of objects, or if you just enjoy gawping at cartoons. But whatever you do, if you're after something to test your intelligence and give you

a feeling of real satisfaction when you've completed it, don't even bother glancing at the box on the shop's shelves.

PAULA RICHARDS

CARTOON COLLECTION

CODEMASTERS £24.99

- Unpretentious packing – and with good reason.
- Too much of the same lumped together.
- Nothing of the games have anything remotely special about them.

STF RATING 64 %

from, 125 skills, and ooh, loads of other stuff. It's the RPG to end all RPGs (we sincerely hope. Oh, what have we said).

We've got 15 copies of *Aliens Special Edition* videos and 20 *MegaTraveller 2s* to give away. And you! – yes, you! with an exclamation mark – can win one (or the other) simply by answering these three questions correctly. (Actually, it's a bit more complicated than that – you do have to send your answers in. I mean, you can't just say the answers and expect the prizes to appear. Er, anyway.)

Those questions, then:

1. The slogan to *Aliens Special Edition* is "This Time It's..."

- (a) Broken?
- (b) War?
- (c) Slightly Longer?

2. *MegaTraveller 2* is the sequel to which game?

- (a) *MegaTraveller*
- (b) *Cover Girl Strip Poker*
- (c) *That one with the little dog and the mutant vegetables*

3. The title of one of Captain Sensible's songs is "Glad It's..."

- (a) *Not Too Chilly Today?*
- (b) *All Over?*
- (c) *A Non-Staining Jumper?*

Right, bung the answers on a postcard or one of them sealed envelope things, and send it to Those Aliens Videos and

MegaTraveller 2 Games Look Rather Good, I'd Like To Win One Please (or TAVAM2GLRGILTWOOP for short), ST

FORMAT, Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2DL by Monday 7 September.

THE RULES BOX

1. The closing date is Monday 7 September, so no arguing because "the dog ate your entry" or "you left it on the bus."
2. No employees of Future Publishing, Empire Software or 20th Century Fox can enter. If they do, we'll repeatedly send anonymous mail of a silly nature to them until they're sorry and apologise. Hah.
3. Although that Paula Richards character hasn't been active, as it were, on the multiple-entry-sorting-front recently, she hasn't lost her touch, so don't try to wing in several entries or she'll scream and scream and scream until she's sick.
4. You don't like the prizes, you don't enter. They're all we've got, and by God we're proud of them.
5. No arguing with the Judge. He didn't get where he is today by people arguing with him, for God's sake.



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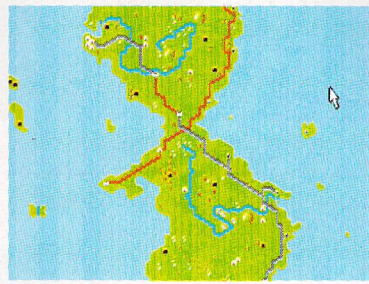
WARRIORS OF RELEYNE

The mists cleared. Gwphfl stepped towards the wizard, his armour clanking. "A battle is beginning," his voice boomed, "A battle in which you might easily have your eye out if you're not careful."

Kwylith cackled. "Brave you are, young lord. But fight me not. For I have developed the submarine." Yes, it's fantasy time once more. And *Warriors Of Releyne* sees you on some small islands, moving your forces around and chopping down the folk who welcome you into their humble dwellings.

The weird creatures must be familiar to you by now, albeit under many other frighteningly vowel-less names. There are quests and swords as well as luscious maidens tending huge baps in blackened ovens, two-headed social workers and ubiquitous warriors stalking blokes in country towns as the pubs reach chucking out time.

What makes *Warriors Of Releyne* (how do you pronounce that?) different is the degree to which you can customise it. You can play various heroic scenarios or you can completely design your own. Huge campaigns, massive treks, mammoth conflicts are yours to spend hours swearing at, providing you've got the patience to set it all up. And it's all mouse-based, which is a



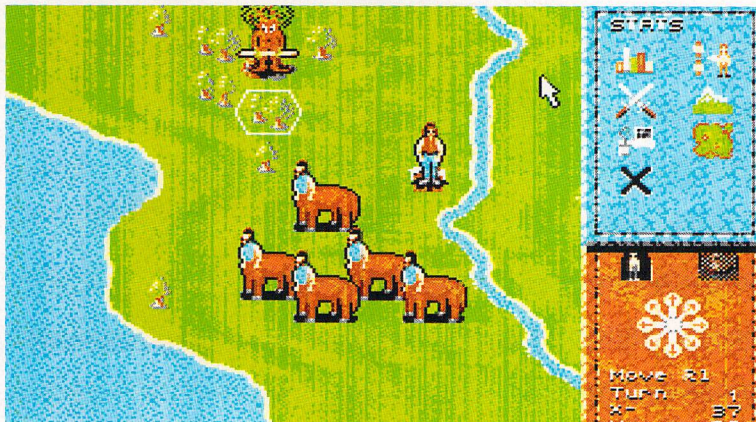
● The *Warriors Of Releyne* from Impressions, live just off the trunk road. Keep left at the Hills of Death and follow the signs to the Caves of Eternal Doom. Oh – and make sure you avoid the Happy Eater on the right.

relief. It doesn't make it particularly easy or quick, though.

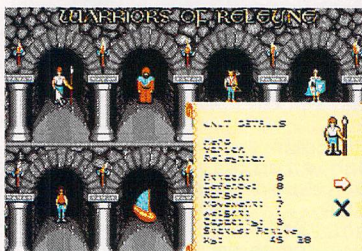
So the mists clear. Two players (or one versus your ST) face the screen together locked into a conflict neither can relinquish until *Inspector Morse* comes on at eight. Huge armies clash. Well, small sprites chug round the terrain, occasionally meeting each other. Empires (and tempers) rise and fall.

VERDICT: *Warriors Of Releyne* isn't at all bad. As a graphical wargame, it's fun, not slow and has many facets to consider in the combat. There's a two-player mode, there are tons of different aliens (or whatever) and there's some decent strategy to brain over. But, as a fantasy game, well, it's a classic example of pedantic speech, wizened crones, crooning wizards and vowel-evacuation.

JAMES LEACH



● The centaurs chatted among themselves, unaware of the rather cheerful elm stalking them from the north. But suddenly the dam burst and they were drowned.



● The Hall of the Slain Heroes. Basically we're thinking of having the whole thing knocked through into one, with a serving hatch leading to the kitchen and bathroom areas.

WARRIORS OF RELEYNE

IMPRESSIONS £25.99

- Better than most Impressions games.
- Not as good as the real thing.

STF RATING 74 %

FORMAT RATINGS REVIEWED

How did *FORMAT* rate the games reviewed over the last three months?

LURE OF THE TEMPTRESS	STF 35	92%
WIZKID	page 76	92%
EPIC	page 70	91%
PARASOL STARS	page 72	91%
AWARD WINNERS	STF 36	90%
ISHAR - LEGEND OF THE FORTRESS	page 78	90%
Legend	STF 36	89%
Gobliins	STF 36	87%
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Warriors of Releyne	page 85	74%
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NOTE: Games in red are reviewed in this issue

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KIDNAPPED! (AGAIN)

It's marvellous, isn't it, the number of games that have the hero dashing off after his girlfriend/brother/dad/sister/mum/dog/cat who's been kidnapped by a unscrupulous tyrant. In the interests of the general public's right to know, Ed Ricketts presents the **FORMAT** Guide to Those Kidnappees in Full

ELF

Ocean
Reviewed in issue 29
STF Rating: 89%



● The sacred roast chicken of the lost city of the ancient peoples of the holy religion of Li eludes our elfy hero once more by disguising itself as a roast chicken and perching on an unreachable platform.

The Plot: The protagonist is a small woodland mythical creature commonly known as an elf, whose girlie friend has been whisked off to unnameable places by some twisted old pervy. So the elf calls the police, right? Explains his situation – you know, “I’m an elf and my girlfriend’s just been kidnapped?” Nope. He trundles off through the woods exchanging frankly silly objects like newspapers for matches and wasting innocent gladeland inhabitants for extra points. Pah.

How did it all end? The elf gets the girl – well, the nymph. Unfortunately she turns out to be not quite as sweet and lovely as he thought, so he spends the rest of his elfy life cleaning out the toilet and nipping down the shops for another pack of Woodbines.

Happy ever after? Well, she is. He’s currently doing a course on philosophy in the hope he can persuade her that she doesn’t, in fact, exist.

FINAL FIGHT

US Gold
Reviewed in issue 29
STF Rating: 74%



● “Have you seen a kidnapped daughter being followed by three irate men go past here in the past two minutes, mate?” “I’m sorry, my contract doesn’t allow me to speak in this caption – visuals only.”

The Plot: Mad Gears. Yes, thought that would frighten you. That’s the name of the gang in *Final Fight* who have misappropriated the Mayor’s daughter. Since she owes him money, the Mayor gets together a posse of exactly three and sets about “cleaning up the streets” by killing everyone he lays eyes on, doubtless making up new legislation along the way to account for his somewhat obvious lack of law-regarding.

How did it all end? The citizens of the town – who are a little bit miffed by the way their mayor is picking them off one by one – band together and, without warning, savagely make a block vote. The mayor is ousted; the Mad Gears get bored of listening to the mayor’s daughter whining on and on and on about how being rich can’t buy you love, release her and join the Salvation Army; and the mayor is sent off to a penal colony somewhere outside Peking, where he’s continually taunted for being crap

Happy ever after? Yes, thanks.

RODLAND

Storm
Reviewed in issue 29
STF Rating: 70%



● The heinous exploding fairy of *Rodland* wreaks its havoc one more time, having already laid waste to the 11 lands of Moulinex and the kingdom of Toshiba.

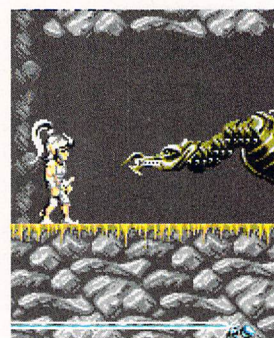
The Plot: In which a brother and sister combo called Tam and Rit (or T and Ri for short) wake up one morning to notice a conspicuous absence of Mother. Said parental person has been bundled into the back of a car and locked up in a tower by A N Evil Man. T ‘n’ R lock and load their magic rods (hence, undoubtedly, the name) and set about brutally smashing the nasty tulip-head things about the head while climbing up the tower. Disgusting.

How did it all end? Well, entropy finally caught up with the universe, and the entire thing just sort of wound down into a small ball of apathy, then disappeared with a tired sigh.

Happy ever after? What do you think?

LEANDER

Psygnosis
Reviewed issue 36
STF Rating: 68%



● Part Two: The travelling contact lens salesman drops by the dragon’s house to fit his new lilac’n’light orange lenses. “No, they really suit you actually, particularly with your darker skin coloration.”

The Plot: A brave knight’s girlfriend was captured and taken away somewhere nasty. You’re probably beginning to get the idea by now, yes? Frankly, you’d think he’d be better off somehow getting over his grief and getting on with his life, wouldn’t you? I mean, there are plenty of other pebbles in the sea, plenty of other fish on the beach. And why doesn’t he get a proper job anyway? What does a knight do all day?

How did it all end? Halfway through his quest, just between worlds 5.1 and 5.2, Leander realises he’s left his ID card at home. Since his girlfriend has the strange habit of insisting on seeing his ID before she’ll believe it’s him (because of a nasty identity crisis as a child), he has two options: (a) either travel right the way back to the start, get the ID and begin again, or (b) give up. And, thanks to our new interactive technology, you can decide the outcome! Simply choose option (a) or (b) and then see below.

Happy ever after? If you chose option (a), no. If you chose option (b), yes. Look out for more exciting interactive questions soon!

GHOULS AND GHOSTS

Klxx
Reviewed in issue 34
STF Rating: 44%



● “Yes, alright, very funny, people. Can I please have my suit of armour back now please? No, look, really, it was absolutely hilarious for the first five minutes, but now – oi! Don’t you dare do that to the left leg!”

The Plot: Good grief. Even after they’re dead the nasties come back for more. In this sad and sorry tale the Knight’s girlie has been spirited away by the ghoulies. (Ha ha ha. Oh hang on, that didn’t work, did it?) So the Knight throws on the first thing that comes to hand – a loose suit of armour that falls off at the slightest touch – and runs around graveyards a lot. It’s not very good.

How did it all end? The local bobby, noticing that Knighty’s armour falls off regularly when females are around, take him “to help with their enquiries.” Four weeks, two lawyers and a nasty bruise later, Knighty is released with a knuckle rap and a voucher giving him two free admissions to the Policeman’s Lodge of the Order of the Stained Cosh.

Happy ever after? Knighty might be, but it’s a sad day for the future of law and order in this country.

There are others, like *MegaTwins*, *Thunderjaws* and *Titus the Fox*, but let’s face it: once you’ve played one kidnapped-love-interest/relative-in-peril-to-be-rescued-by-brave-person game, you’ve played them all. **stf**

GAMEBUSTERS



Said the old man to the babe 'pon his knee: "Son, there are two things you should remember in this life. But I'm not going to tell you what they are." Said the babe to his paternal parent: "Do shut your neck, Dad, I'm trying to look at Gamebusters, ably presented by that Ed Ricketts fella"

TEN THINGS YOU SAY TO PEOPLE PLAYING GAMES

1. You're dead.
2. You should have jumped back there.
3. Oh no, you didn't want to plummet down that chasm like that.
4. There's a power-up down there past that heavily armoured battle station.
5. This is your last energy blob.
6. You're on your last life.
7. Your dinner's ready.
8. I really need a wee, don't you?
9. This game cost how much?
10. Three more points and you've beaten the high score.

PRINCE OF PERSIA

DOMARK

Here're some general cheats for this somewhat elderly game, from Jolyon Richardson of Wiltshire.

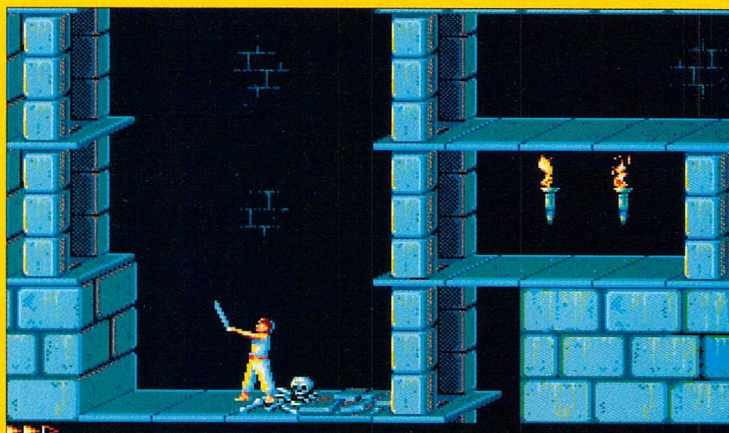
Many people claim that the hero is a bit unresponsive at times, especially when it comes to performing difficult running jumps. If you're one of these people, try using the keyboard – the key arrangement is easier than the tricky joystick diagonals. Remember, it takes the prince a while to do a running jump, so it's best to push the joystick up (and to the left or right of course) by a couple of steps before you want him to jump.

Jamming the joystick in the diagonal direction without running makes the prince perform a from-the-spot jump, which covers the equivalent of two tiles. A running jump covers three, but you have more control over a running jump, and by holding down the <Fire> button you can hold on to the edge of the opposite platform and pull yourself up to safety.

If you're falling long distances, you can sometimes save yourself by holding down the <Fire> button. The prince then grabs on to any platforms he passes. On level seven you're dropped from the sky right at the start of the level, so make sure you have the <Fire> button held down before you start the level.

Most of the sword-wielding guards are pretty simple to kill if you just stay still and wait for them to enter the range of your sword. On later levels things get harder as skeletons rise from the ground and attack you – they can't be killed. You have to keep advancing on them, forcing them off the platform so that they fall to their doom.

Level six is occupied by a rather fat swordsman, whom you can only kill by advancing and striking immediately. The blow is deflected, so parry sud-



● "Someone gave me this sword and told me to stand over here by this pile of bones, then scream loudly and look anguished. Don't quite know why – I think Benetton was mentioned at one point."

denly to avoid the fat man's counter attack. There is now a split second delay where he is vulnerable. Strike immediately after you parry to kill him.

Watch out for holes in the ground – they send spikes upwards to run you through. You should jump them, walk slowly through them or lower yourself down from the platform above – carefully stepping into the pit, not just falling.

The biggest problem you have with razor crushers is being forced into them if you're losing a sword fight. Getting through crushers is best achieved by stepping through them carefully – not running! It's best to start moving just as the crusher closes.

Save your potions for when you really need them. Most of them just put your strength up one notch. The ones that are really hard to reach usually increase the amount of energy you can carry. Watch out on level two, when two potions are next to each other. The one on the left is poisonous, so don't drink it. There is also an anti-gravity potion which can help you survive one really long fall. Don't expect to see it until around level seven.

Sometimes, a roof tile is loose and could lead the way to a vital extra life-giving potion (on level three for example). To remove loose tiles, just jump up at the tile – but it's a good idea to make sure that you're not under it when the tile comes crashing down. You can see if a tile is loose by jumping at the ceiling at any time – if one is loose, it wobbles.

SOME HANDY GENERAL TIPS

Most potions are helpful. A few are not, but some let you see things from a different point of view.

Occasionally you come across a guard who's so close that you don't have time to draw your sword. When this happens, the chances are you have passed underneath him at some point. So if you see a guard above you at any time, try walking past him instead of running. Then when you come to him, he should be facing the wrong way, leaving you time to draw your sword.

On level four, when you return from the pressure pad which opens the exit, you come across a mirror that seems to be impassable. Take a run up and leap through it. You should now be on the other side, minus your shadow, which you find later on in the game.

On level six, you come across a wide gap with your shadow looking at you from the other side. Take a running jump and hold down the <Fire> button. You don't reach the other side, but fall down the gap. Don't panic! Keep your finger on the <Fire> button and you should end up on a ledge, hanging by your finger tips. Push your joystick forward to climb up. You're now on level seven.

At times it may seem impossible to complete a level. Timing is very important on a lot of levels, so keep trying – you should get there in the end. Often it's wise to err on the side of caution and not run everywhere when you can walk.

EPIC OCEAN

This is very strange. We were sent this solution to this amazing game (see the review on page 70) before it was even released on the ST. Surely **Richard Eilkins** of **Warwickshire** hasn't been using (gasp) a different machine? Anyway, he's got himself this month's £50 prize.

OPERATION 1: BREAKOUT

Objective 1

In this mission, the idea is to clear a path through the Zionix mine belt. It sounds hard but really it's very, very simple – just shoot at the mines! Although you're sometimes briefly hampered by fighters which are supposed to be stopping you, this mission really is easy – don't be put off by the number of mines or the scale of the game area.

Objective 2

In this mission, the idea is to destroy a deep space tracking station.



● From your start position (1), fly on route 2 toward the radar tracking station (3), then the generator (4).

To destroy the tracking station you must find the generator, which produces a force field that protects the tracking station. To find the tracking station go to the pink spot in the centre of the map. Four roads merge into the radar tracking station. To find the force field generator, go diagonally right and forwards.

Destroy the generator but watch out for fighters. Don't engage them if weapons are low or time is short. Proceed back to the tracking station, again following the road. Destroy it with photon torpedoes.

OPERATION 2: WIPEOUT

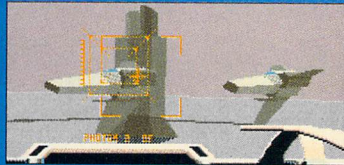
Objective 1

You must destroy the central processing unit or four intergalactic space ports. It's easier to tackle the latter rather than the CPU. First, press <Help> to get coordinates for the first ISP. Destroy it, then proceed along the roads to find the other ISPs.

Objective 2

Obliterate the mining complexes on

the moon of Statilica. This level is, in a way, a case of trial and error and it often feels like you're looking for a needle in a haystack. Look for buildings like this:



● To find your target, just think of **Canary Wharf** and hit those cannons!

You'll know if it's a target if:

- (a) it's heavily guarded by fighters;
- (b) on your radar, it shows up as a green blob;
- (c) when you destroy the complex, your percentage rises.

OPERATION 3: GLORY

Objective

Repel the advancing Rexxon attack fleet. On this level you find the enemy spacecraft to the rear of the convoy. A good idea is to look for the large waves of aircraft.

OPERATION 4: BLAST

Objective

You must neutralise the Magma cannon on the planet of Potead. Head towards the centre of the map area. Watch out for fighters which resemble A-Wing fighters (from *Star Wars*™). When you find the 10N Cannon (and you do know when you've found it), use the Epical lasers to destroy it.

OPERATION 5: GALACTIC STORM

Objective

Your aim is to eliminate the regional space fleet, before the arrival of the main Rexxon battleforce. It's vital in this mission to destroy every possible spacecraft.

OPERATION 6: RETALIATOR

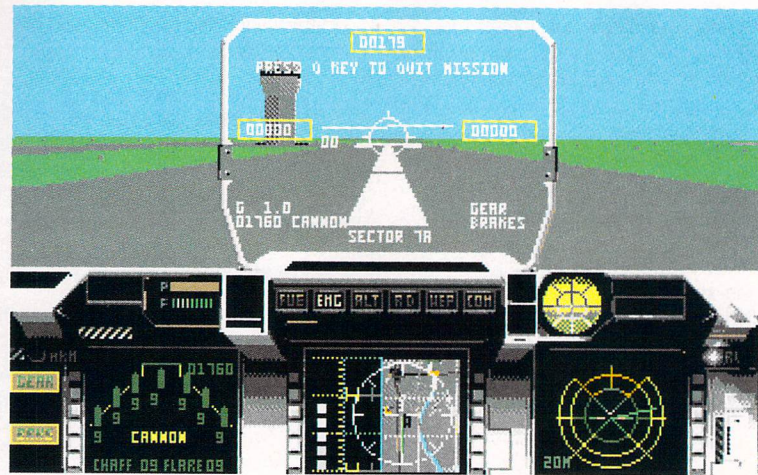
Objective

To annihilate the Grand Imperial Rexxon Command Centre. It's important in this mission to follow the points used in Operation 4 – look out for fighters, but get to the target area as quickly as possible.

OPERATION 7: MOTHER OF WARS

Objective

To finish off the remaining armies in the Rexxon Empire. Success is important here. Fail to complete the objective and a provisional mission comes into effect. Use the same tips as in the other space combat missions.



● Tip 1: leave the runway. That way you can perform a tricky stunt known as flying, which involves the forces of gravity, wings and various aeronautical principles. See your manual for further details.

ACTION FIGHTER FIREBIRD

A tip for this venerable game from **Wesley Trigwell** of **Salisbury**: while playing the game press Q a couple of times to get more weapons.

DEVIOUS DESIGNS MIRRORSOFT

Try these level codes:

PPFBGWLP	OIEIRPEN
NPSSLNWS	YTAIBTLR
GIWBOLAP	IOFTANON
IYRAGNOE	GIBGIBWF
YLFELNGT	TYWTPRWO
NNSPFBRR	IYRNPMLE
TNWLFEEN	YYELOEIO
YTMWBWPW	NNMPINRE
YYRNFISM	



● Devious Designs by Mirrorsoft. Do the two names connect at all? No of course not, why on earth should you connect devious, underhanded, twisted and downright dirty actions with a Mirror group company?

ELITE FIREBIRD

Duncan Martin of **Essex** reckons he's never seen these cheats published before. Nor have we. Have a look at them.

To hyperspace across the galaxy on two light years of fuel, do the following. Leave the space station and call up the galaxy chart. Select a planet within your fuel range, then move the pointer over the planet you really want to visit. Start the hyperspace countdown, then keep pressing 6 until the pointer is

locked on to your planet (or very near to it). Be careful not to overshoot it. Then wait for the countdown to finish – and lo and behold you've jumped right across the galaxy.

To get more cargo than is available, buy all the available cargo. Save the game to disk, reload and five more tonnes appear. Repeat as needed.

F29 RETALIATOR OCEAN

Here are a few hints and tips for this arcade simulation from **Stuart Johnson** of the **West Midlands**:

① If you're playing at the First Lieutenant level then you need not worry about the weapon selection. Watch out, though: you can suddenly be promoted, forget and take off unarmed.

② You can avoid using missiles against MiGs if you are adept with the cannon. If you can't get a MiG off your tail, try this manoeuvre:

- (a) go up to a high altitude;
- (b) check the rear view and see if the MiG is still behind you;
- (c) point straight down and turn through 180 degrees;
- (d) pull up quickly and the MiG should be in front of you. Let rip with the cannon and he goes down. Or try missiles at point blank range.

③ If you have difficulty landing, try this approach. As you near the airbase, slow down to 185 km/h and go down to about 200 feet. Lower the landing gear and gently point the nose towards the middle of the runway. As soon as you reach zero altitude, hit to activate the wheelbrakes. Easy!

④ Even on missions that require you to blow up a building or bridge, take a couple of air to air missiles in case you meet some MiGs.

⑤ The exception to the last hint is in Europe. If you shoot down a MiG that isn't an objective (because it hassles you while you try to flatten the city), the game crashes when you land.

⑥ I recommend the F22; it looks bet-

ter and it handles slightly better too.

7 Try to avoid blowing up anything which isn't an objective; if you accidentally destroy a skyscraper, you get court-martialled.

8 Remember you're in a Stealth Fighter! Fly low, slow and with stealth mode on, and that should stop the SAMs firing at you. For dogfighting with MiGs, switch off stealth mode so you can see the radar, switch on ECM and fly high at 8,000 feet to give you room to manoeuvre.

9 Enjoy the game and save your posi-

tion after every victory. Then if you die, cancel the save and you can continue.

FINAL BLOW

SALES CURVE

When fighting, pause the game and press F10 six times. Unpause for infinite energy.

HARD DRIVIN'

DOMARK

Phillip Ackerman of Berwickshire in Scotland has provided some nifty tips →

DIZZY, PRINCE OF THE YOLKFOLK

CODEMASTERS

A complete solution and map from Colin McGuirk of Birmingham.

First, get out of the ditch. If you have trouble with this, then this game is not for you. Get the pickaxe and pick up the cage. Remove the boulder on the hillside using the pickaxe. Now get the golden nugget from inside the cave. This enables you to cross the water and get past the ferryman.

Pick up the bridge kit from the cloud above. Cross the water on the boat. The ferryman takes the gold from you. Drop the cage next to Fluffle – he won't get inside it yet.

Climb trees to the enchanted tree tops. Drop the bridge kit by the opening between trees. Go onto the narrow ledge and jump across the clouds. Go into the tower and pick up the harp from the bottom. Get back out and jump back onto the narrow ledge. Climb the trees, right up to the uppermost branches. Go to the very top left, stand close to the end and jump left, onto the clouds. Keep jumping left and go to heaven.

Give Saint Peter his harp back and he gives you some cheese. Drop down off the cloud to the cloud below. Pick up the cherry and drop off to the left of that cloud. Go back across the water and drop the cheese by the cage. Fluffle now gets in the cage. Pick it back up.

Go to the troll by the castle entrance and drop the cage. Go into the castle, go up and pick the motor up. (The bread is a red herring.) Go back to the ferryman and give him the motor for his boat. He gives you a scythe.

Go back to the tower (on the right). Go into the tower drawbridge. Drop the scythe by the green plant – now you can get past. Go right and pick up the brass bugle (the potion is another red herring). Keep on going on – don't pick up the spanner yet, and don't worry about the other Dizzy. Go up again and onto the roof. Pick up the tweezers and jump off the roof. Go back to the lion with the sore foot and drop the tweez-

ers by him. This takes the thorn out of his foot.

Pick up the thorn and go back to the spanner in the tower (right). Drop the thorn on the floor by the spanner – make sure you're not touching the spanner when you do this. Walk to the right and up, then go to the switch above the spanner. You've killed the other Dizzy.

Now go and get the spanner and go back to the rear entrance of the castle. On the way give the bugle to man at the start. Now pick up the joke book.

Go to the switch to operate the drawbridge (just above the drawbridge itself). Drop the spanner. Now cross the drawbridge and give the joke book to the princess. Take the flag. Go back into the castle and to the flagpole on the roof. Drop the flag, and the man with the bugle appears.

Press <Return> and he summons the King, who knights you. Go and get the key below you, then go back to the tower drawbridge and to the deserted tower. Open the door with the key.

Kiss Daisy and she awakens – because now you're a prince, assuming that you have collected all the cherries on the way (20 in all). The cherries are hidden behind the stereo (next to the ferryman), in the tree house, behind Fluffle and all around the clouds. Good luck!

Princess

Flagpole

Switch

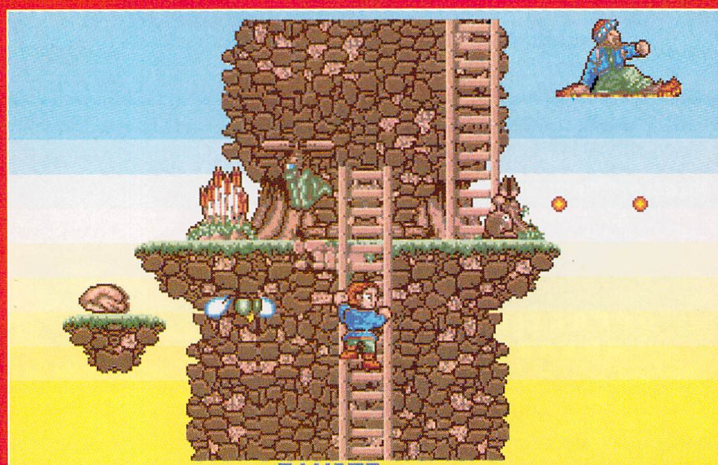
Key

Motor
Troll

WHAT'S WHERE IN DIZZY, PRINCE OF THE YOLKFOLK

- The cherries are these cherry-like objects: ●
- The blue stuff is water;
- Other important bits are labelled.

Door
Bucket of water
Leaves
Match
Guard



● "So there's this Englishman, this Irishman, and this elf. And the elf says, 'I was outside and this idiot was shooting apples.' And the Englishman says... no, wait, the Scotsman says... it was the Irishman – was it an elf? Hang on..."

ELF OCEAN

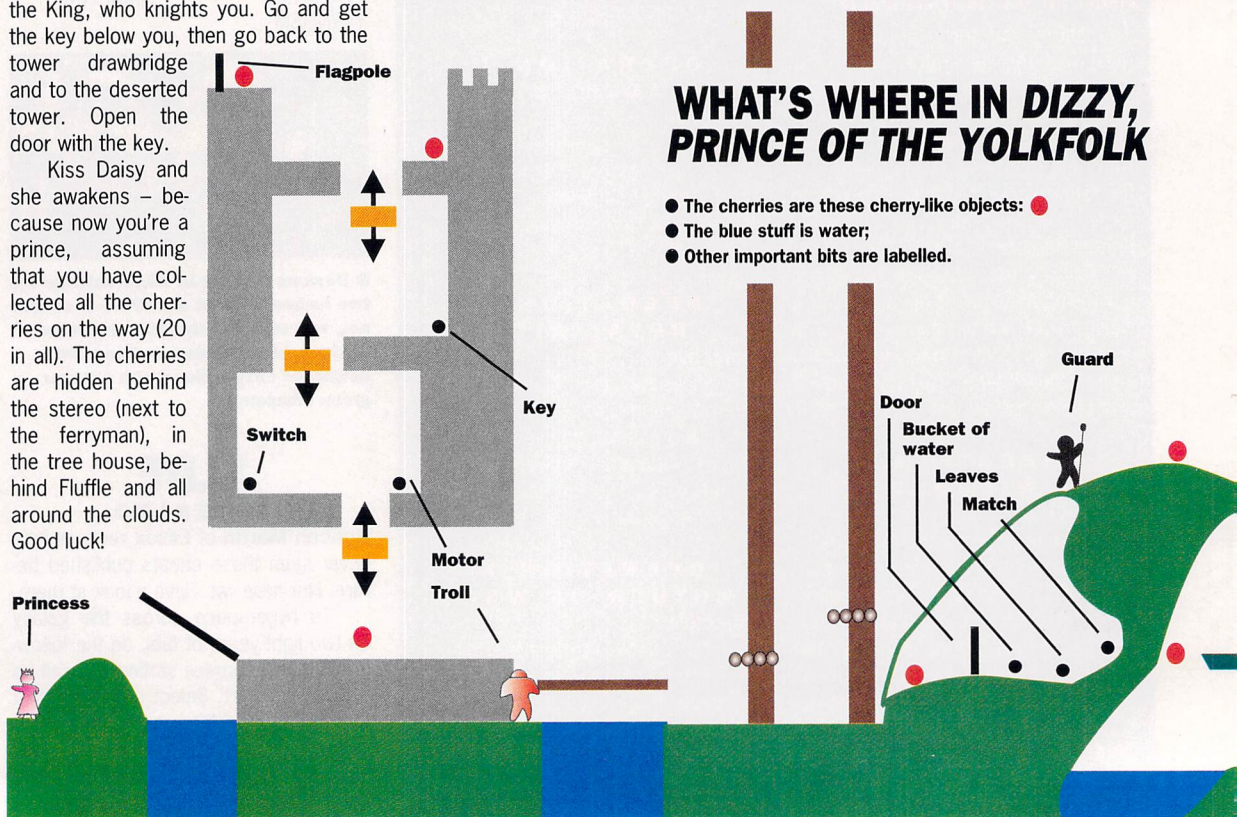
The complete solution from John Maddison of County Durham.

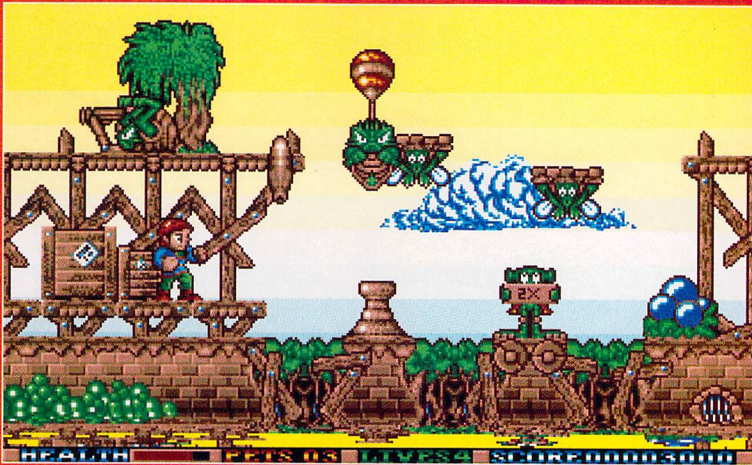
So here's how to do everything ever in Elf from Ocean, except level one because (a) most people should be able to get through it and (b) it leaves us more space for the important bits.

LEVEL 2

Get the small key and the handle from the first underground caves. Unlock the steel cage in the top right hand corner and get the cog. Attach the cog and the handle to the winding mechanism and wind out the bridge. Cross the bridge, pick up the boots

and give them to the prisoner, who gives you a silver flute. Give this to the jester before you open the cage with the key, which you can find outside to the right. Travel to the oil well and fill up the oil can lying on the left of the map. On the way, kill the jester – you need the flute for level five. Now use the oil on the stiff handle for the bridge. Pull the lever and jump across the gap. Go down and into the guard's room. He has a nasty habit of jumping on you. The trick is to fire quickly and pressure him into a corner.





● Level three, simply entitled "Switches." (Cue, if only for old times' sake, maniacal laughter...)

LEVEL 3

The trick to this level is flicking on the platform switches in the correct sequence after first turning on the power in the first room. The sequence is as follows:

- 1: flick
- 2: flick
- 3: flick
- 4: flick
- 5: leave
- 6: flick
- 7: leave
- 8: flick
- 9: flick
- 10: flick
- 11: leave.

Make sure you jump all the monsters that come from the water, and watch out for the plants.

LEVEL 4

Collect the dagger from the dead man's back, together with the boxing glove. You should pass a switch on your way – don't flick this.

Punch the first guard with the boxing glove and take the paper with the password on it. Cut the rope holding up the cage. Go down and collect the gold icon that falls out of it.

Give the password to the second guard. Travel to the chief at the far end of the map. Give him the gold icon. This allows you into the temple to fight the god.

Remember to keep firing when the mouth is opening, and to jump/duck all shots. If you can afford it, it's best to buy the force shield and rush him, but make sure you get him.

LEVEL 5

Make sure you kill the dwarfs, then find the bone and give this to the large flapping monster. Walk to the edge of the chasm in front of the Halt sign and stand still. The flapping monster now flies over. He picks you up and drops you on the other side.

Go through the door, collect the belt and give the flute to the blacksmith, who turns it into a cross. This enables you to pass the bats. Collect the bit of machine lying on the side. Collect all the other five bits and give them to the mechanic (who's building some sort of machine). He gives you a piece of paper to give to a guard, who in turn lets you in to see the king.

To get past the king you need the three jewels. Once this is done, you can battle with Henry. Try to keep him away from you by keeping him under pressure, because otherwise he makes a straight charge for you.

LEVEL 6

Buy the antifreeze from the shop. Also buy the flying spell – this level can't be done without it.

Collect all three parts to the magical spell lying around. Now use the spell to knock out the wizard in the tower to the right of the map. Collect his amulet and find the mallet, chisel and blow torch. Melt the ice block containing the sculptor and give him the mallet and chisel. Find the ear muffs and give them to eskimo. He gives you an ice block, which you should give to the sculptor. He chisels an ice crown for you. Give this and the amulet to the ice king at

the top left of the level. He in return gives you an icicle.

Go back to the eskimo and hit him on the head with the icicle. Steal his wheels and give these to the old man. He gives you a key to let you out of the final door which takes you to the ice monster. He usually comes right up underneath you. Don't bother shooting at him while he moves in and out of the ground – he's invincible. Dodge the snowballs for long enough and you can do it.

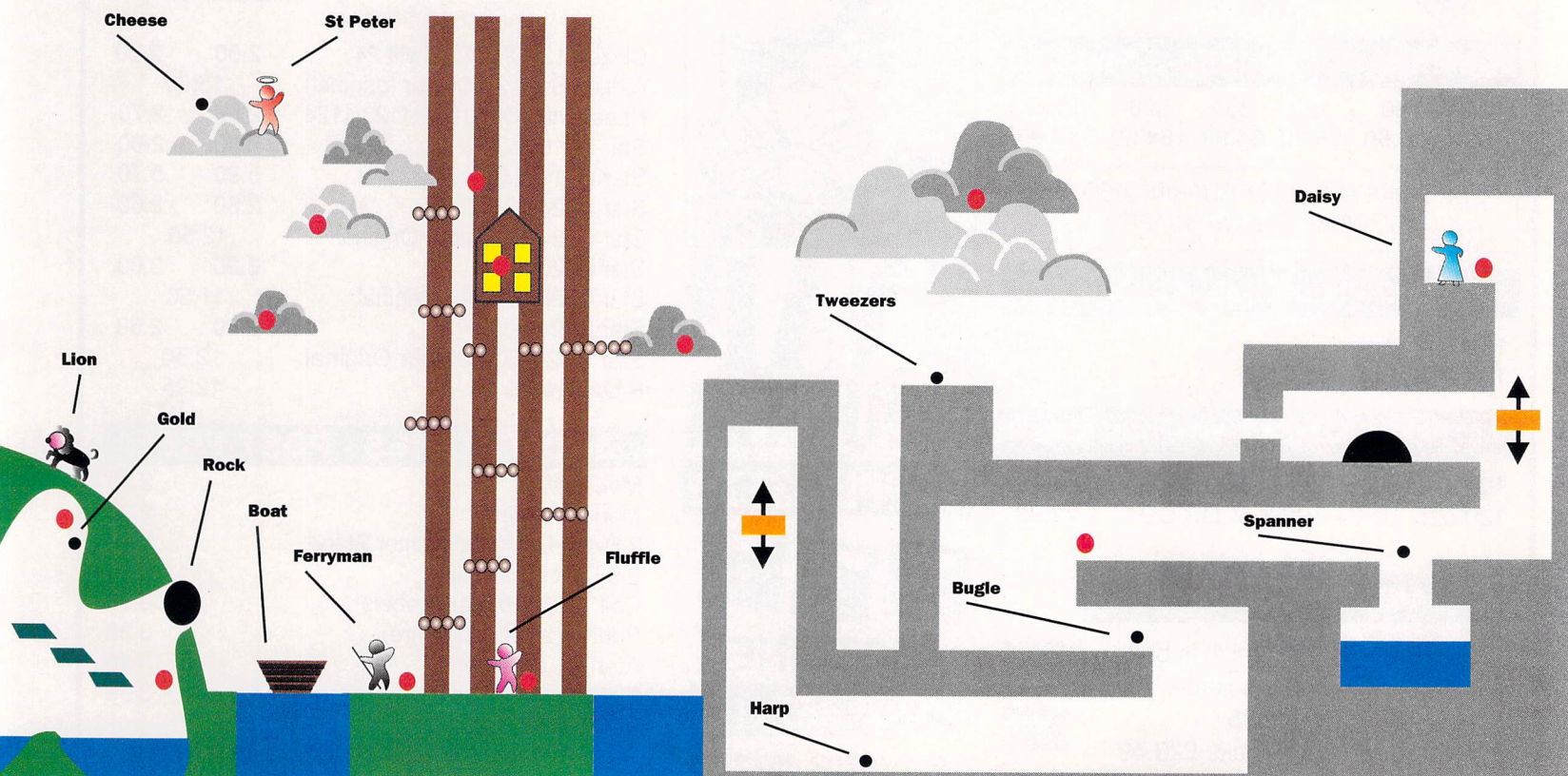
LEVEL 7

Collect the pork pie after shooting the container behind it. Give this to Teedle Dee (the one in red and green). He gives you his smelly socks – use these against the old woman. (Cruel, but it pays, after all.) After she faints, take the stick and insert it into the wheel of the bike the reptilian is riding. He then flies over the handlebars, which stops him generating the power that surrounds the control panel (it's later in the level). You can now press the red button that starts the platform moving, and go in the door.

LEVEL 8

There's a big choice to be made on this level: are you going to save Elisa or just get out sharpish? If you want to save her, you have to find the ten parts of mechanism and destroy them before entering the door.

As Elisa's captor moves around on his magic carpet, keep moving or he shoots you. Kill him with rapid shots, and sit back to watch the ending.



for getting anywhere in this much-better-than-the-useless-Race Drivin' game from those Dominic and Mark lads.

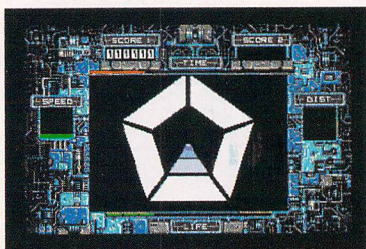
To control the car, put it into manual and accelerate to the maximum speed. Press <N> to go into neutral and the car stays at its maximum speed. It doesn't slow down when it goes around a corner and most importantly it doesn't skid.

To beat the Phantom Photon: when the signs show to go round the stunt circuit, pay no attention and go round the speed circuit (it's far easier) and thus easily beat the Photon.

JUG

MICRODEAL

On the title screen, hold down <Esc> and click the mouse pointer on the right edge of the picture, for infinite energy and nine lives.



● *Psyborg*. Coo, it's just like *The Time Tunnel*, isn't it? Except without the awful acting. 'Course, that's nothing like as bad as *Voyage to the Bottom of the Sea*. Did you see that one where...

MAGICLAND DIZZY

CODEMASTERS

Type in DIAMONDS AND PEARLS to gain infinite lives. This can be done anywhere in the game. Remember to press P to unpause, because typing this pauses the game. Courtesy of Jeff McDermont of Cleveland.

PSYBORG LORICIEL

Here are the codes for the planets of the first four systems, from Ronnie Reid of Glasgow:

ANACREON	3: 5269	5: 4269
1: NONE	4: 7235	
2: 1610	5: 4794	ZORGON
3: 1510		1: 4640
4: 1704	KALGAN	2: 4412
	1: 0413	3: 2436
KRYPTON	2: 6855	4: 8883
1: 7564	3: 9411	5: 1564
2: 5027	4: 9591	6: 1902

SKYCHASE MIRRORSOFT

When the game starts, pull back and loop the loop. You should immediately see the opponent so you can shoot at him. This is a quicker and easier way of getting the better of the enemy, and you're less likely to get hit yourself. Ta to Ben Pitty of West Sussex. *stf*



● If you laid all the bits of paper with *Populous 2* tips on them from end to end, you'd be pretty bored by the end of it. In fact, you'd probably give up half way, and go and read a book, or something.

POPULOUS 2 ELECTRONIC ARTS

Yet more advice on this epic game – this time on how to defeat Zeus, from Alex Clarke of Surrey.

At the start of the game the position of the Papal Magnet is a problem. To prevent your walkers getting stuck, cut off most of the right-hand side of your land. When Zeus moves his Papal Magnet, immediately make your walkers go to your Papal Magnet.

Don't make a leader unless there more than 5,000 people at your magnet – it's a waste otherwise.

Adonis is the most effective leader.

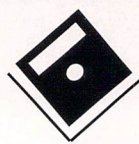
With regard to Papal Magnets, Zeus is quite thick. Kill his leader and put a

swamp under his Papal Magnet until one of his walkers gets to it. Since swamps last for ever, this is usually quite funny.

If Zeus has bunged a few Baptismal Fonts around the place and you move quickly enough, his walkers encounter these on their pilgrimage, giving you a never-ending supply of worshippers. This is how I won.

Often when Zeus uses a volcano, he destroys a lot of his land and blocks his worshippers from getting to the Papal Magnet.

Zeus often wastes mana making tidal waves. If you're careful (that is, build sea walls), they don't harm you.



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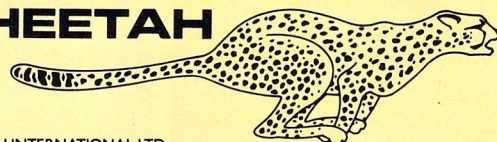
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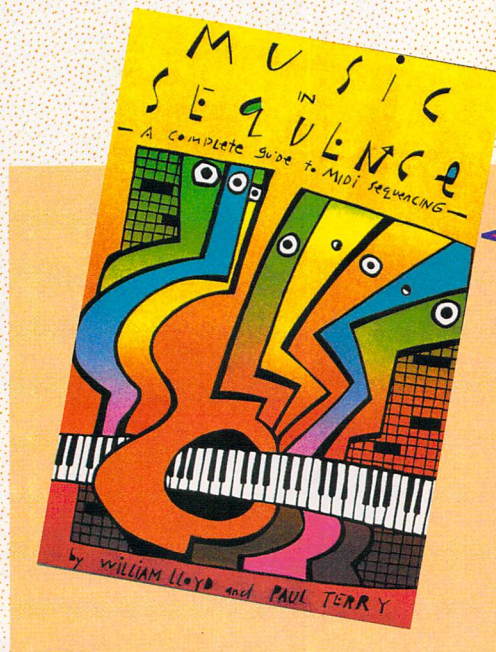
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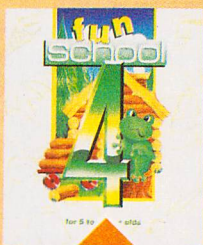
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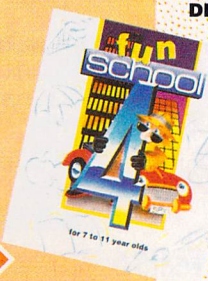


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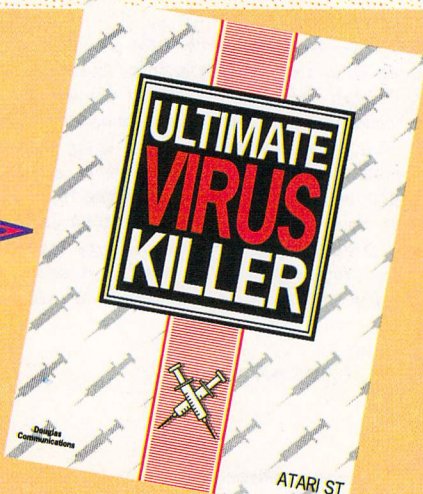
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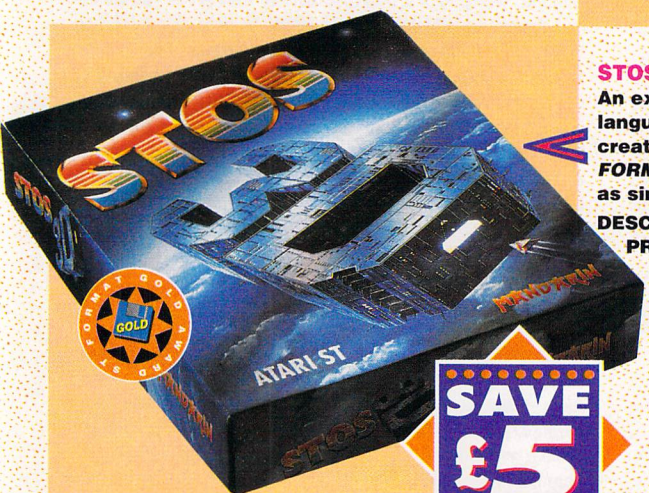
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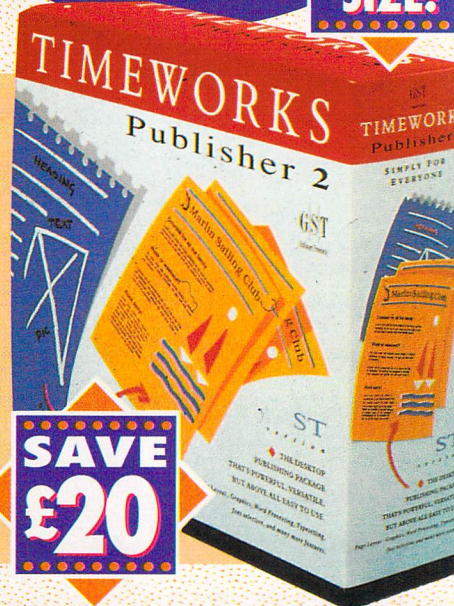
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Well, that's just

Every programmer's worst critic is always another programmer. Give a programmer someone else's game to play and they immediately start tearing it apart: "Ooh no, he's used the wrong routine there. Look at that sprite! Call

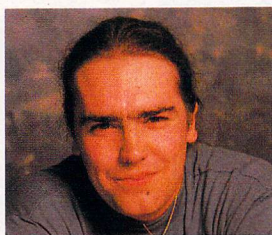
that animation?" and other such disparaging comments. So for a game to impress a programmer it must have something special. It must have style, it must be addictive, it must be the pinnacle of its genre – in short, it must be great. In the interests of finding out

just what it is that makes great games great, we hassled five top-class programmers into letting us know what their favourite games are and just why they think they're so incredibly good. Read and be amazed, if not slightly surprised. **stf**

HARDCORE –

Back in issue 34 we told you about Jeff Minter's new Shareware game, *Hardcore*, which was "coming soon." Well,

● Justified, but not particularly ancient. The venerable Jon Hare is one of the chaps who're responsible for the visuals in *Wizkid* and *Sensible Soccer*.



JON HARE,
GRAPHIC ARTIST with SENSIBLE SOFTWARE

Last game they wrote: *Wizkid* from Ocean – reviewed on page 76.

Worst game they've ever written: "Something called *Oh No!* on a budget label ages ago. It wasn't ever supposed to be an epic."

Favourite game, and why is it so good? "It used to be *Kick Off 2*, but *Sensible Soccer* has just crept into first place now. It took a long time for it to convince us but we've played it so much it just has to be our favourite – although at the moment we're fed up with it 'cos we're late for the deadline! It's just very playable. We worked for a long time on getting the control system right and making it as realistic as possible, and we think it's more fun because of that.

● The breathtaking games, *Epic* and *Robocop 3* are the product of Martin Kenwright's fiendish and utterly pock-marked imagination.



MARTIN KENWRIGHT
of DIGITAL IMAGE DESIGNS

Last game they wrote: *Epic*, reviewed this issue on page 70.

Worst game they've ever written: "None of them have been really awful – all our games have reached number one in the charts, so I suppose that must be

some sort of record. There are bad things about all of our games. On *Robocop 3* we ran out of time and had to finish it quickly, so it wasn't everything we wanted. Conversely, we spent too long on *Epic* – the game was first advertised back in October 1990! – so we perhaps lost some impetus on that. We were very pleased with *F-29 Retaliator*, though the collision detection was a bit dodgy, which is why we made it pixel-perfect in *Epic*."

● Dean Lester refused to confirm whether or not *Shadowlands* was written after a particularly disastrous trip to the Ming Wah Chinese Restaurant.



DEAN LESTER
of TEQUE LONDON

Last game they wrote: The ever-so-ebullient *Shadowlands*, which we reviewed in a massively competent manner in issue 33 – STF Rating: 84%.

Worst game they've ever written: "I don't think I want to answer that! Let's just say it was a secret

project that never got completed. Oh alright, let's say *Badlands*, but only because the original coin-op we converted it from was so dire. We did the best we could, but in situations like that you can either scrap the entire thing and do it your way, or do a mediocre game. We had to do the latter."

Favourite game, and why is it so good? "It has to be *Dungeon Master*. It wasn't just a game, it was

● The man, the llamas, the sixties, the step up to another plane of existence where fish can't knit. Ah, sorry, didn't see you there Jeff, now about that Kaftan...



JEFF MINTER
of LLAMASOFT

Last game he wrote: *Revenge of the Mutant Camels*, which appeared on Cover Disk 31.

Worst game he's ever written: "It would have to be *Photon Storm*. It could have done with more stuff happening on-screen. That's often one of the criti-

cisms of my games – the graphics are very small. The thing is, I wasn't prepared to compromise the speed for the graphics.

"There weren't any samples in there either. I hadn't written the sample routines at that point. Samples help a game so much."

Favourite game, and why is it so good? "*Virus*. You could say there's not much depth to it, but it has

● But with a face like that, the only question which needs answering is why oh why didn't Peter Molyneux become a Newsround Extra presenter?



PETER MOLYNEUX
of BULLFROG PRODUCTIONS

Last game Bullfrog wrote: *Populous 2* reviewed in issue 30 – STF Rating: 95%.

Worst game they've ever written: "It would have to be our first game, *Fusion*. We knew so little about the machines we were writing for at that time, and

the game was written in C, so it was quite slow. There were some good touches to the game, but technically it wasn't very good. *Druid – Enlightenment* was fairly awful too, but that didn't make it to the ST."

Favourite game, and why is it so good? "My absolutely favourite game of all time just has to be *Dungeon Master*. It was so good on the ST – the design was perfect, it was a huge game squeezed

great...

You know how sometimes you really really wonder what five of today's top programmers' favourite games are? And just what they think makes a great game? So do we, so we went and found out. Ed Ricketts goes "Hmm, really, is that right?" a lot

YOU KNOW THE SCORE, PART TWO

you're going to have to wait a little bit longer for it. The thing is, Jeff's time has been taken up lately with his work on the

new Atari Falcon, so *Hardcore* is taking a back seat. What he is doing is putting a five level demo of the game into the PD.

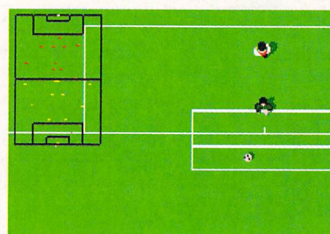
The idea is that you get the demo, play it to death, and then send your criticisms, suggestions, praise and so on to Jeff.

He'll then incorporate the most popular suggestions into the finished game – make it easier, add more aliens, and so on, depending on what you want because, in Jeff's words, "It's pretty extreme at the moment – very fast and quite difficult."

Stunt Car Racer was good, too. It moved really well – it genuinely gave you the impression of trying to balance on a stunt track."

Can great graphics or sound make an otherwise dull game good? If so, how? "No, definitely not. If the graphics or sound are too good, they start to outweigh the gameplay which is never a good thing. *Another World* is a good example of that sort

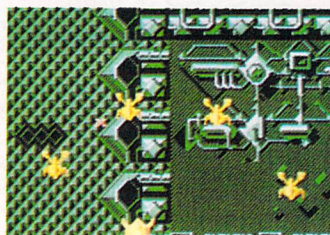
of thing. It's a great game and some of the sequences look almost cinematic, but they always lead you to think the game can do more than it does. There's a certain symbolism to graphics, and as soon as you make them more than symbolic, the gameplay just can't match so it just appears stupid and unrealistic."



● We were going to have a pic of *Sensible Soccer* here as *Sensible Software's* favourite game, but we thought that was a bit narcissistic. So instead here's a pic of Anco's *Kick Off 2*, the Sensible's second favourite game (and the inspiration behind *Sensible Soccer*).

Favourite game, and why is it so good? "There are so many good games coming from the States, but they have the luxury of having 50 people working on them and a budget of millions. On the ST I'm very fond of the older games, particularly the Steve Bak ones like *Goldrunner*. At the time they were a milestone, because they set standards for speed and smoothness of scrolling."

Can great graphics or sound make an otherwise dull game good? If so, how? "Yes, they can, but ultimately they're just supporting a weak game. I think people realise that eventually."



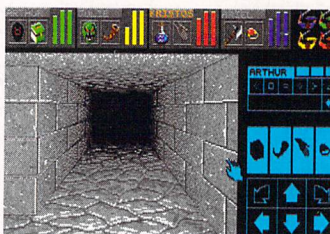
● Now this really is getting on a bit. Microdeal's *Goldrunner* was one of the first games that made the ST do anything worthwhile. Fast it may have been, but it wasn't the most interesting game in the world. Still, it's Martin Kenwright's fave.

an experience. It all fitted together as a game – even when you weren't playing it you were thinking about it. I'm also very pleased with *Shadowlands*, though it is our own. It was new and original – we didn't just do a clone."

Can great graphics or sound make an otherwise dull game good? If so, how? "They can certainly improve people's perception of the game, but

not elevate the game to great status."

Favourite Blue Peter presenter? John Noakes. Sheer class in an anorak. Such a shame about Shep.

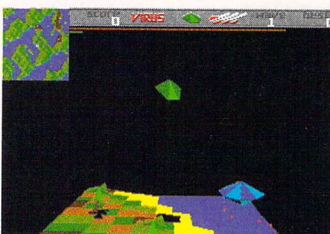


● *Dungeon Master*, appearing for the first time in this list. Although the game hasn't been available for a while now – since Mirrorsoft went down the pan – Psygnosis have just re-released it, complete with *Chaos Strikes Back*, for £25.99. Get hold of it!

superb control. It's like *Defender* in 3D, so people like me are bound to be into it. It's a game that really keeps you at it. The control system is hard to master, but it's worth persevering because once you get round it, it gives you so much control. It really gives you physical pleasure."

Can great graphics or sound make an otherwise mediocre game good? If so, how? "They

can't make a game great, but they can make a fair game tolerable. In the end, the playability is all that matters – *Llamatron* is a good example. The graphics are tiny but the game makes up for it. I've often spent days or weeks refining a part of a game, like inertia or something like that, to get it just right. It's so important."

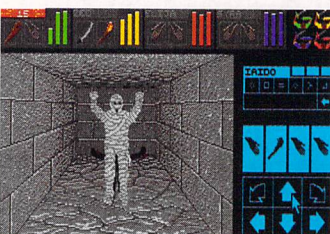


● Firebird's *Virus*, the hard-to-get-into but ultimately very rewarding game, is Jeff Minter's favourite. Incidentally, for more news on Jeff's *Hardcore*, see the box above – *Hardcore* – you know the score.

into 512K (you could play it for ages) and everything was done just right. It's the most imitated piece of software ever, and no one has ever bettered it. I played it right through, twice."

Can great graphics or sound make an otherwise dull game good? If so, how? "It depends on how you define a great game. I would define it as a mixture of good graphics, good sound and good

gameplay. A game must have all these to be truly great. *Another World* is a good example of that. If you took away any one of the graphics, sound or plot, the game would be very average. Graphics or sound can help the review of a product, but can't make it great. The most important thing for any game is lastability."



● *Dungeon Master*, Peter Molyneux's favourite game of all time. Just for the record, it's Chris Lloyd's favourite too. Not that you care, really.

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Art attack

ALIEN 5: THE ST PICTURE

Martin Anthony of Kent spotted the

feature in STF 34 which described how you can use a grid as a guide when drawing pictures. He was inspired by this to use Canvas to create this moody Alien picture, which he calls "Alien." Martin gets this month's £25 prize for

this great picture and not for being 16 years old.

● Canvas was yours complete on STF Cover Disk 34.



● "I drew a grid using the line function because I wanted it to be exactly the right size to use up the whole screen. I then found a handy transparent grid lying around and used it to trace the image in black in the zoom studio one box at a time.



● I selected a reasonable palette using close shades of brown, then continued to trace the image using the zoom until it was finished. I changed the grid colour to the background colour and made the background black because I was intending the final background to be dark. I then changed the black I had drawn with to white because I couldn't see a thing!



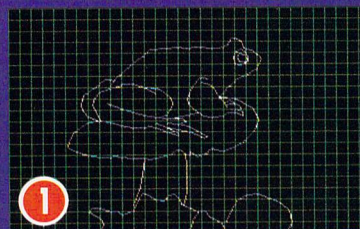
● Using the zoom studio I proceeded to add the shading, doing the easiest bits first because I was scared of the other bits. I shaded each small section completely. I don't know how people can build up detail - I would never know when it was finished.



● I finished off the shading with surprisingly few mistakes. I also used the "anti-aliasing" method as described in STF 34. I think this worked best on the area of light to the right of the face. I used the replace function because I still had two colours set to black. I ended up creating an overpowering red to test that it had worked. I filled the background and replaced again so the black inside the alien was opaque, and the black outside transparent.

TOAD ON A FROGSTOOL?

Alastair Douglas from Swansea used Canvas to produce this picture of a frog. We think it is an excellent effort for an 11 year old.



● "The frog and toadstool were taken from a postcard. To get the proportions right I drew a grid on the postcard and used the grid function in Canvas. Using the K-line function I carefully copied the outline of the frog and toadstool. Next I made a palette using golden browns and some greys and greens.



● Using the zoom function I shaded the toadstool pixel by pixel. This took me a long time because I had to keep leaving the zoom studio to make sure the picture looked right. I had to keep referring to the postcard to make sure that all the markings were correct.



● Next I started work on the frog. This took a lot longer because I didn't have many shades of grey or greeny-browns. I had to reduce the size of some of the black markings on the frog because they looked wrong. The back legs were also a problem because the black on them is the same shade as the shadow on the toadstool.



● I now made the bottom half of the picture black by using the block replace function, and I shaded the stalk. Then I drew in the leaves using a medium brown and drew in the veins using K-line. I then shaded them using zoom and added more veins. I added a smaller toadstool next to the big one to add extra interest to the picture.



● I filled the bottom left hand corner in dark green and added another leaf. The toadstools on the right were copied from a book using K-line and shaded using zoom.



● I filled the top of the picture using black and sprayed in the background. I made the greens darker and sprayed the edge of the large leaf. The picture took about ten hours altogether."

Once more we sort through a gigantic pile of floppies to bring you the very best artwork created by *STF's* incredibly talented readers. This month Clive Parker has drawn the short straw and picks out the winners

The standard of entries for the gallery constantly thrills our chipmunk colony here at the *STF* office. They rush about chewing on the envelopes and generally making a nuisance of themselves. Keep the pictures rolling in – the more the merrier. There's a handsome prize of £25 for the best pic each issue. Re-

member to include the stages in the construction of your masterpiece, along with a text file on the disk describing each stage and the methods you used. Pack the whole thing up in a jiffy bag along with a self-addressed glass of milk and send it along to us at: Gallery, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.



● For the background I drew a circle graduated from white on the right to dark grey on the left. I

blocked the circle, then used the brush paste option to draw twisting tubes. The graduated shading ensured that the light source would always be from the right. I shrank this to two smaller sizes to fill the other areas of black.



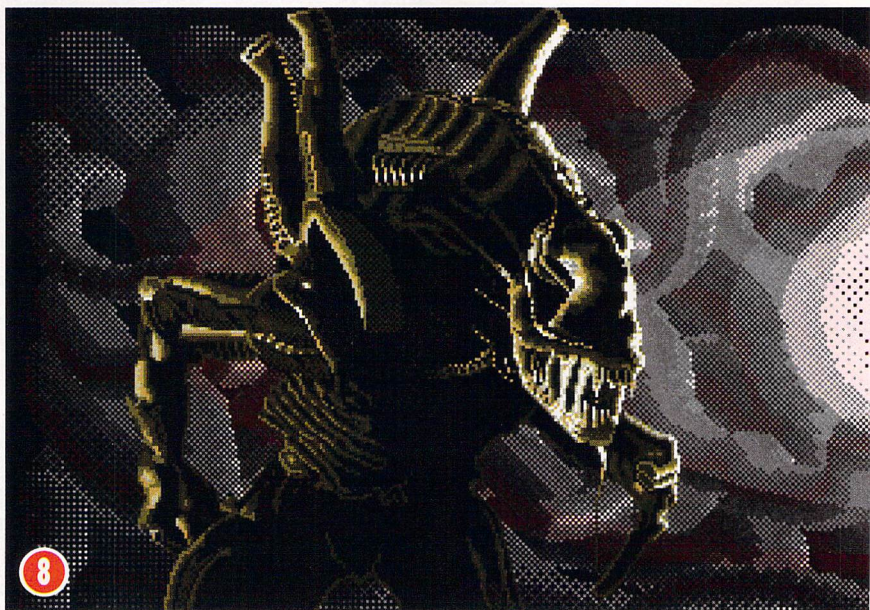
● To create the light source I drew a series of ellipses and filled them using the checked pattern, leaving alternate black pixels. I

filled each ellipse with adjacent colours of grey. The outermost shades are going to be black but I changed them to green to see what I was doing.



● I pasted the light source over the background with the intention that the background would be visible through the alternate transparent pixels. This worked very well. I then removed a few ugly looking pixels and the background was finished.

● I then pasted the alien over this background. I changed the palette to make it look more moody and darkened the background to improve the effect. The signature is created as a sprite so I could draw it in separately and also save it for the future. The entire drawing took ten hours to complete."



ON TARGET

This picture of Robin Hood took **Woon Chin Chee** from **West Malaysia** more than 20 hours to complete. He says that if it doesn't look like Kevin Costner he hopes it looks like Robin Hood. Woon also used *Canvas*.



● "First I used the ellipse and line functions to draw the figure. This is because I find the *ST* mouse difficult to control using the draw option.



● After drawing the figure, I chose colours for the face. Then I used the zoom option to draw the face. I started with the nose, followed by the eyes, the mouth and then the hair. After that I used black to draw the shading at the left hand side of the face.



● After the face was completed I used zoom to work on the hands. After drawing both hands, I then chose the colours for the clothing and drew the top part of the shirt.



● I then continued with the lower part of the shirt using the same technique, using zoom for the details.



● This is when the background comes in. It's drawn using the spray option. I used yellow as well as light, medium and dark brown and black for spraying. Finally I drew the Robin Hood logo separately and then pasted it onto the top left of the main drawing screen, and my signature is printed below it."

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- ☒ 720K Formatted capacity
- ☒ LED Track Counter
- ☒ External Power Supply
- ☒ Daisy Chain Through Port

DataPulse Plus

ST Hard drives

The Data-Pulse range has recently been re-designed. The Data-Pulse Plus range now offers a more compact case that cuts down on noise even more, all ports are marked, an extensive range of software utilities are now included and our range of special offer utilities has been expanded confirming our commitment to future support.

- ☒ All drives are formatted/partitioned and tested ready to "plug in and go".
- ☒ Extremely low noise.
- ☒ Fully Autoboosting and Autoparking.
- ☒ DMA device selector & On/Off switch on front of case.
- ☒ DMA Out port for daisy chaining extra drives/Laser printer.
- ☒ Full metal case measuring 300mm x 285mm x 51mm (wdh), providing good shielding, and monitor stand.
- ☒ High quality ICD boards and controller software, choice of ICD board with or without battery backed clock (prices differ).
- ☒ All drives include Vault archiver, Backup software, Virus killer, MCP shell program, Midstudio & Midstudio Master demo's.

Due to Bulk purchasing power we can offer the following special offer deals to all existing and future Data-Pulse/Data-Pulse Plus hard drive owners.

Neodesk 3	£ 24.99
HD Turbokit	£ 14.99
Diamond Back II	£ 29.99
DC Data Diet	£ 49.99

A real time data compression/de-compression system to increase the capacity of your hard drive.

Data-Pulse Plus

Data-Pulse Plus 52Mb GE	£ 339.99
Data-Pulse Plus 52Mb ICD	£ 359.99
Data-Pulse Plus 105Mb GE	£ 439.99
Data-Pulse Plus 105Mb ICD	£ 459.99
Data-Pulse Plus 120Mb ICD	£ 529.99
Data-Pulse Plus 240Mb ICD	£ 799.99

The Data-Pulse Plus 120 and 240 incorporate the new Quantum mechanisms which feature 256K Read & Write disk cache, faster access time and improved reliability. All Data-Pulse Plus drives include Quantum mechanisms which include 2 year warranty from date of manufacture.

Aries Upgrades

The Aries Upgrade board is an in house designed, Multi layer board utilising high density ZIPP RAM chips. The board has been designed to allow progressive upgrading from the base 512K up to 4Mb. The board does require some soldering but once installed is very reliable. The board is hand assembled in our workshops by skilled technicians and is fully tested before despatch. It also comes complete with fitting instructions and test software.

Our technicians can fit the board to any ST for a small fitting charge. We can arrange courier pickup and return to ensure fast turn around. A same day fitting service is also available. Please phone for further details of courier and same day service.

Aries Upgrades (any ST(FXMI))

512K Aries board	£ 39.99
2Mb Aries board	£ 84.99*
4Mb Aries board	£ 149.99*
Courier pickup	£ 10
Courier return	£ 6
Fitting charge	£ 15
Same day charge	£ 15
16/4 chip upgrade	
STFM	£ 24.99

Please check the configuration of your machine before ordering. These chips are not surface mount.

*special offer

The NEW *Brush* Mouse

- ☒ 150 Dpi resolution
- ☒ 500mm/SEC Tracking speed
- ☒ Switchable between ST/Amiga
- ☒ Opto/Mechanical Mechanism
- ☒ Includes Deluxe Paint ST
- ☒ Direct mouse replacement

£24.99 with D-Paint **£19.99** without D-Paint

GI Optical Mouse £29.99

The Official Golden Image Optical Mouse is a high quality, 3 button, replacement mouse. The fully optical mechanism means no moving parts and offers far higher reliability than opto/mechanical mice.

- ☒ 250Dpi, 500mm/sec tracking speed
- ☒ Fully Optical
- ☒ Mouse mat included
- ☒ Switchable ST/Amiga

GI Mouse

The Golden Image Opto/Mechanical Mouse offers 290 Dpi resolution, 2 Microswitched buttons for greater reliability and crisper, more positive response, Anti-static silicone rubber coated ball. Also includes mouse mat.

Only £14.99

Jin Mouse

Don't be deceived by the low price of this mouse. Mass production of the Jin mouse has resulted in a high quality Opto/Mechanical mouse featuring 290 Dpi resolution, 500mm/sec tracking speed, Anti-static silicone rubber coated ball.

Only £12.98

Ladbroke Computing International

Ladbroke Computing International are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which involves testing of all Hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. All prices correct at copy date 15/06/92 (while stocks last), and are subject to change without prior notice. All prices include VAT but exclude delivery. Add £5 for next working day courier delivery, add £10 for Saturday courier delivery (mainland UK only). Add £3 for postal delivery, only on items under £50 (check with staff before ordering). All prices available on Mail Order. Shop prices may differ. Shop/Mail order premises: 33 Ormskirk Road, Preston, Lancs. PR1 2QP. Open Mon-Sat 9:30am-5:00pm. Phones answered from 9:00am. Ladbroke Computing International is a trading name of Ladbroke Computing Ltd. BFO addresses overseas, deduct 17.5% VAT and add normal UK carriage.

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TOTAL! The only magazine dedicated to Nintendo gamers, full of reviews and tips for the NES, Game Boy and Super NES!

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Masses of up-to-the-minute NES reviews. And we're telling you everything you need to know about *all* the Castlevania games!

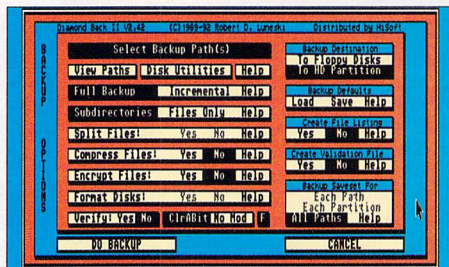
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12 stunning pages of tips with player's guides for Super Mario World (SNES), Star Wars (NES) and Duck Tales (GB)!

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A testing time

They came out of the sun, machine-guns blazing – but that's what happens when you fly into the sun with flammable machine-guns. Should've read *STF's* comprehensive reviews section first. (ST-compatible machine-guns next issue)



● The not-quite-so plain file backup menu page. From here you can select files or paths to back up, format disks and generally click madly on little boxes. The program can even estimate how many floppies you need to build a scale model of Canary Wharf – and back up a hard drive partition.

Brilliant backup

Diamond Back 2

MACHINE: ALL STs WITH HARD DRIVES

PRICE: £39.95

FROM: HISOFT

CONTACT: 0525 718181



Anyone who uses a hard drive on a regular basis is one day likely to lose the entire contents of the drive. It may not be today or tomorrow, or even next month, but it could happen. When it does, the screams of anguish can usually be heard for several miles because the screamer hasn't made a backup copy of the data on the drive.

Hisoft are now distributing *Diamond Back 2*, probably the most comprehensive backup utility available for the ST/TT range of machines. The complete package consists of the main program, a comprehensive disk formatting program, a file finding utility and a disk cache utility.

The main program can be configured to perform either a total Image backup, where all the data in an entire partition is copied, or a File backup, where selected files are copied. File backup can be made in both normal or compressed format: normal format makes a direct copy of the files, which can be run directly from the floppy disk, while compressed format takes all the files and merges them into one large file in the same manner as the ARC or LZH archive utilities. This can make an enormous saving in the number of disks used to make the backup – compression of between 50% and 75% is possible, depending on the file type.

The Image option only backs up the actual sectors used on a partition, so if you have only used 8MBytes of a

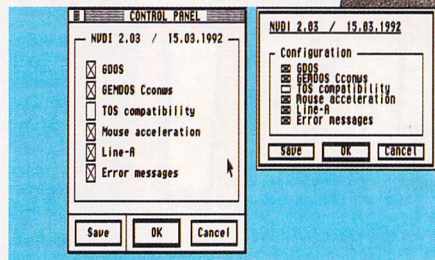
20MByte hard drive then only 8MBytes of data is backed up to floppy disk. This means that the data can be restored to any size partition on any hard drive, as long as there is enough space available. On previous image backup routines data had to be restored to partitions identical in size to the original. Unlike file backup, image backup is performed in a special format that can only be restored to disk by using *Diamond Back 2*. One unique aspect of the program is the ability to back up any Spectre GCR Macintosh emulator partitions that you may have on your drive.

The format program provided on the disk is a stand-alone version of the formatter built into the backup program and can format both double-density and high-density disks. There is also an option to format ST disks so that they can be read by the Apple File Exchange transfer software, essential for transferring files to a Mac or a Spectre GCR partition.

This is probably the most comprehensive hard drive backup program available for the ST anywhere. The main file backup page looks daunting but it is really very easy to use. The manual is concise and informative and doesn't go over the top with technical jargon. If you have a hard drive then this program is essential.

CLIVE PARKER

STF RATING: 92%



● This is the *NVDI CPX* for use with the *Xcontrol Control Panel Accessory* and the *NVDI Desk Accessory*. As you can see the Desk Accessory and CPX versions are almost identical in appearance, and both enable functions to be toggled on and off from within GEM programs.

A shot of speed

NVDI

MACHINE: ALL STs

PRICE: £39.95

FROM: ATARI WORKSHOP

CONTACT: 0753 832212

One thing many people dislike about STs is the speed of GEM, the Graphics Environment Manager – it's so slow! This is not because the ST runs at 8MHz, but because the general operating system on the ST is written in C, which is not the swiftest of languages. Programmers have written replacement routines which intercept many of the inbuilt commands and replace them with machine code substitutes, thus speeding up the system. Well-known examples of these "software blitters" are the old *Turbo ST*, *Quick ST* (£19.95 The ST Club # 0602 410241) and *Warp 9* (£29.95, also from the Atari Workshop). By far the swiftest so far is *NVDI* from the Atari Workshop.

NVDI is a complete replacement for the ST's VDI (Virtual Device Interface) routines and offers amazing speed increases in many of the GEM routines – in some cases up to ten times faster! Although other similar programs offer equal speed increases, *NVDI* is massively compatible with professional software and with hardware upgrades. Also included in *NVDI* is a built-in replacement for GDOS, which replaces the Desktop system font and also enables any GDOS-dependent program to run.

The installation program supplied makes setting up *NVDI* on your system a breeze. Simply run the program and

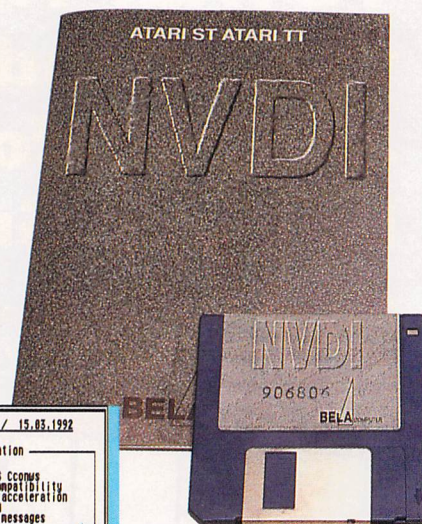
assign a boot drive, then follow the on-screen prompts. The program does the rest, creating folders and files and even an *ASSIGN.SYS* file to save you the bother of editing it in a word processor.

Other files include a configuration program to set up the system parameters, including GDOS, GEMDOS, TOS compatibility, mouse acceleration and default error message language (English or German). Also provided are an Accessory and CPX enabling *NVDI* to be configured from within any GEM program – for instance GDOS can be disabled if it clashes with any software you wish to use (*Canvas* is one example), then re-enabled after you've finished.

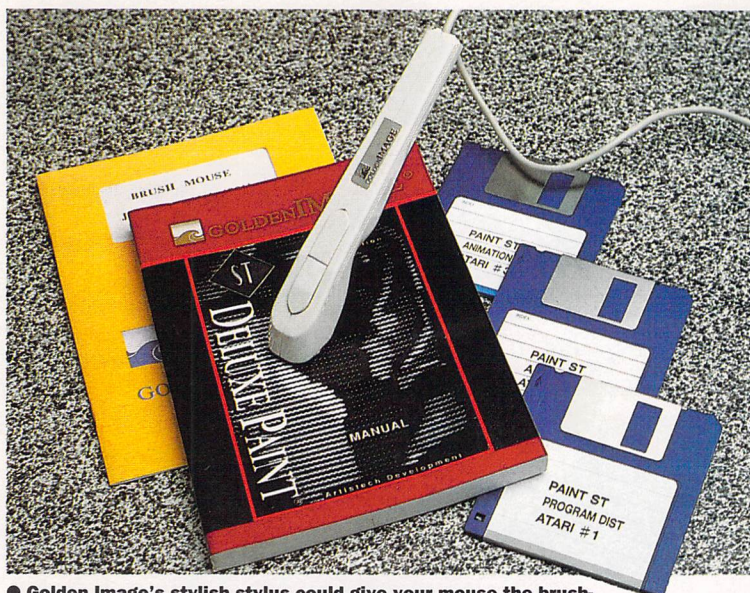
To use *NVDI* you place the main program in an *AUTO* folder, so it runs automatically when you boot up. Using *NVDI* with programs such as *GFA Draft* and other graphics-intensive applications increases screen redraw speeds dramatically, and text scrolling in programs like *1st Word Plus* is also greatly increased. The manual gives clear instructions on installation and use of the Desk Accessory and CPX provided, and there are very helpful document files on the disk. *NVDI* is the best ST software accelerator we have tested to date.

CLIVE PARKER

STF RATING: 89%



● *NVDI* isn't much to look at – a thin manual and a floppy disk – but there is hidden power concealed within this innocent-looking package.



● Golden Image's stylish stylus could give your mouse the brush-off for art. It's absolutely wonderful for virtual painting, and you don't get any of those annoying splashes on the carpet however clumsy you are with the airbrush.

Brush strokes

Golden Image brush mouse

MACHINE: ALL STs

PRICE: £19.99 (£24.99 COMPLETE WITH *DELUXE PAINT*)

FROM: LADBROKE COMPUTING INTERNATIONAL

CONTACT: 0772 203166

Although the ST's mouse is fine for most applications, when it comes to drawing it's a clumsy tool. It's like trying to paint wearing boxing gloves. The natural implement for artistic endeavour is a pen or a brush, and you certainly didn't catch any of the old masters wielding a mouse when working on their paintings. Although there are such things as graphic pads, where a pen-like stylus and a special tablet are used to control the mouse pointer on-screen, these are very expensive and are unlikely ever to be cheap mass-market items. So until now, there has been no alternative to struggling with the standard mouse. But, thanks to Golden Image, there is now a cheap and innovative alternative, the Brush Mouse.

The Brush Mouse is shaped like a very chunky paintbrush, with a flexible lead coming out the top which plugs into the ST's mouse port. It is styled to be comfortable and natural to manipulate, similar to holding a pen. At the end where the pen's nib would be, the Brush has a plastic ball, rather like a giant roller-ball pen or a miniature version of a standard mouse's ball. This enables you to "write" with the Brush and watch the pointer on-screen mirror your actions. There are two little buttons, corresponding to the normal mouse buttons, mounted so that you can operate them with your index finger.

The whole thing works a treat. It might look awkward, but using it is sur-

prisingly easy and pleasurable. You soon forget that it's attached to the ST, and the Brush becomes an electric pen that you are jotting with. Clicking and dragging files about on-screen and marking blocks of text in a WP program is a real doddle. Load up an art package and the Brush really comes into its own – it's the closest you're likely to get to the feel of real art on your ST. And you can simply fly in and out of menus to change tools – Jackson Pollock or Ralph Harris never worked this fast!

Using the Brush could revolutionise the way you use your Art programs, and the results you get from them. That's not to say that the Brush is perfect though. It could be a little more solidly made – the roller ball ought to be heavier and more like the rubber mouse ball material instead of light plastic – and it would be nice if the Brush were a bit smaller. But for the first version of such a device it's pretty damn good, and the asking price of under £20 makes it a real bargain. In fact for a extra fiver you get *Deluxe Paint* thrown in too – an absolute giveaway for this fully-featured colour-only painting and animation program, complete with detailed printed manual. You do need a soft mouse mat to use the Brush though – it doesn't work properly on a hard shiny surface.

PETER CRUSH

STF RATING: 88%

● See this little black thing with wires sticking out? That's ST Secure, that is. Bung this into your machine and you'll never be able to use it again... unless you know the password.



Data protection act

ST Secure

MACHINE: ALL STs

PRICE: £19.99

FROM: LADBROKE COMPUTING INTERNATIONAL

CONTACT: 0772 203166

In business many people use password protection on their machines or terminals to safeguard information from being copied or stolen by shady characters. In the ST world there have been password protection programs for both floppy or hard drive based systems, but it is quite simple to get around these. On a floppy-based setup a password program can be bypassed by booting from a blank formatted floppy disk. It is a touch harder getting around an auto-booting hard drive system, although most hard drives can be initialised from a floppy disk, thus giving you access to the data on the drive.

There is now a combined hardware and software password system available for any ST, called *ST Secure*. The hardware section is a small unit called the Timelock, about one inch square and a quarter of an inch thick. From one corner four colour coded cables with spring loaded grabbers protrude. These cables attach to four key points on the ST's circuit board. There are clearly labelled diagrams showing the connection points for all the major versions of the machine except for the new Mega STE range. Once the unit is installed the ST resets after 40 seconds unless a password is entered or

the *Passkey* program is run.

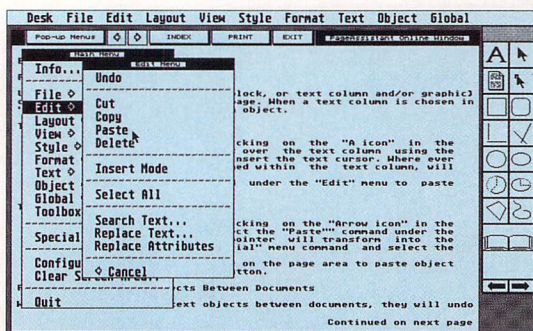
The software is made up of three programs and the actual file which contains the coded password. The *Password* program is the main one of the bunch and it must be the first program in your AUTO folder. If any other programs should run before it, you do not get enough time to enter a password before the reset occurs. The password program creates a file in the root directory called KKKKKKKK.KKK which contains your password, and this is then hidden so it cannot be accessed or read.

The second program is called *Passkey*. You can use this if you forget your password. It disables the Timelock and enables a normal boot-up sequence to take place. The last program is *Unhide*. This deletes the hidden password and writes a new KK file containing the default password ATARI. You can then reset a new password by using the *Password* program.

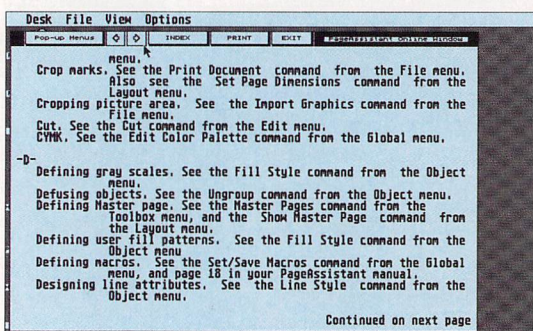
ST Secure is simple to install and easy to use and is supplied with clear, easy-to-follow instructions. All in all, the perfect password system for your machine.

CLIVE PARKER

STF RATING: 88%



● These Menu entries in *PageAssistant* are in exactly the same order as *PageStream*'s own, but also include a few extra entries, with info on things like PostScript printing. Information on each topic is displayed in the window, and the menus clear when you select your option.



● You can choose to have text displayed in a large size if you don't like the small print. Here is the "Index" option, giving you a complete run-down of all the actions and commands possible with *PageStream*, and where to find the info on them within *PageAssistant*.

Page the oracle

PageAssistant

MACHINE: ALL STs, ALL SCREEN RESOLUTIONS

PRICE: £29.95

FROM: THE ST CLUB

CONTACT: 0602 410241

If you are looking for a good desktop publishing program at a reasonable price, *PageStream* (£169.00 from Silica ☎ 081 309 1111) could be the one for you. It's both powerful and fairly easy to use. However, SoftLogic, the publishers, are based in the US, and phoning them with any queries is not practical. So where can you turn?

Enter *PageAssistant*. It's also from America, but is being handled by the ST Club. It is a Desk Accessory that provides online help and advice for each command of *PageStream* v2.1. Since it's a Desk Accessory, it can be used from within any GEM software by means of the Desk menu. A 52-page book accompanies *PageAssistant*, with in-depth tutorials on the more advanced aspects of *PageStream*, plus relevant text and pictures on disk.

PageAssistant comes on a double-sided disk, and you need at least 1Mbyte of RAM if you want to run it together with *PageStream*. If you only have a 520 ST, you can run *PageAssistant* by itself and print out summaries from it, but this is not as attractive or as useful. The *PageAssistant* DA takes up about 70K of RAM, and uses "overlays" – that is, it loads in the various sections of data when they are needed. This is no problem if you are running the software from a hard drive, but is slow when run from a floppy drive. It runs in all ST screen resolutions, includ-

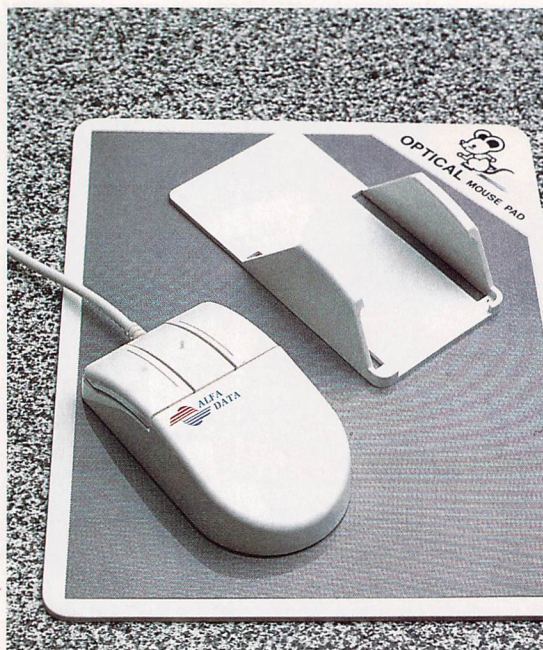
ing TT and large-screen monitor resolutions.

PageAssistant is straightforward to use. Click on "Pop-up Menus" and a main menu drops down in the *PageAssistant* window, duplicating all the entries in *PageStream*'s own top-of-screen menu. Clicking on any main menu item opens a sub-menu on screen, listing all the relevant commands. Clicking on any of these commands in the *PageAssistant* window gives you an on-screen explanation of how that command works, together with where in the *PageStream* manual you can find details of the command. There are a few screens of information per command, and you can scroll back and forth by clicking on arrow icons in the window. An "Index" option in the *PageAssistant* menu displays an on-screen index of all the actions and commands you could want to carry out with *PageStream*, and tells you where where to look them up.

The information conveyed by *PageAssistant* does not merely duplicate that in *PageStream*'s own manual, but provides a useful additional insight into the DTP software. You could almost dispense with *PageStream*'s manual, and find any info you need more quickly and on-screen. *PageAssistant* is the ultimate "Help" option, and will help you get the best results from *PageStream*.

PETER CRUSH

STF RATING: 83%



● The Alfa Data optical mouse is a sensitive all-seeing creature, and the poor little thing has had its ball removed. The way it slides effortlessly across the special glossy mat brings Torville and Dean to your Desktop.

After the ball

Alfa Data optical mouse

MACHINE: ALL STs

PRICE: £29.95

FROM: GASTEINER TECHNOLOGIES

CONTACT: 081 365 1151

Probably the best thing you can do with the official Atari mouse supplied with your ST is to give it to the cat and replace it with any of the alternative mice available, which are all better. Most of these work in the usual way, with a heavy rubber-like ball and roller-like sensors to detect the ball's movement. But devices with moving parts, as any scientist or garage mechanic can tell you, are prone to mechanical failure – they wear out and stop working. Now, if somebody could invent a mouse with no moving parts, there would be nothing to wear out the whole thing should work better and more accurately. That's exactly the idea behind optical mice, like this one from Alfa Data.

The Alfa Data Optical Mouse looks pretty much like a normal mouse, except that it has three buttons. The centre one however is non-working, being "reserved for future use." The lead is rather shorter than usual, but it is underneath that the Alfa Data Optical Mouse is really different: there is no ball. Instead, a little lamp shines onto a special mat provided, and optical sensors pick up any movement made from reflections off the mat. The mouse mat supplied has a black and white printed grid, and unlike the usual soft foamy mats is hard and smooth with a high gloss surface. It also takes up less room than a typical soft mat.

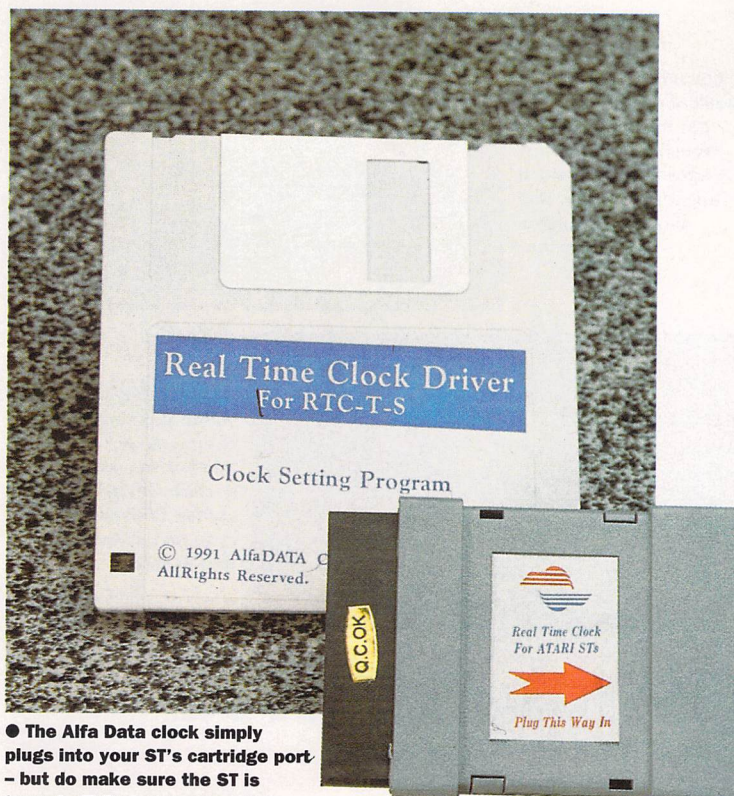
In use the Alfa Data optical mouse is a very smooth operator. Sliding the

mouse about on its mat is a new sensation: it positively glides over the shiny surface of the mat, and no downwards pressure on it is required. Very accurate control of the on-screen mouse pointer is possible, and there is no "creep" when you stop moving the mouse – the pointer remains completely static. In its specification the mouse claims an impressively high resolution of 300 dots per inch and a tracking speed of 600 mm per second. It is compatible with mouse accelerator programs, like the excellent *Mouse Tricks 2* Desk Accessory (£10.00 from Jonathan Lawrence, 76 Sistova Road, London SW12 9QS; reviewed STF 34), and this improves the feel of the device even more.

For most purposes an ordinary mouse is a cheap and satisfactory option, and even if it goes wrong after heavy use it can be replaced for around £15. This optical mouse is twice the price, but does offer fast, smooth and accurate operation. It doesn't get dirt caught in its workings, but it only works with its own special mat and you do need to keep the mat reasonably clean and scuff-free because damage to the grid pattern on its surface could disorientate the mouse. If you require great accuracy for DTP or Computer Aided Design work on your ST, or just like having the best quality peripherals, you should try this mouse out for yourself.

PETER CRUSH

STF RATING: 81%



● The Alfa Data clock simply plugs into your ST's cartridge port – but do make sure the ST is turned off first or you could do serious damage to both units.

Clock this

Alfa Data clock

MACHINE: ALL STs

PRICE: £14.95

FROM: GASTEINER TECHNOLOGIES

CONTACT: 081 365 1151

When you boot up your ST, you can set the "system time" and date by using the standard Atari Control Panel or any other similar Desk Accessory. This ensures that any files subsequently created are properly "date stamped" – invaluable when you are trying to keep track of many files or want to sort them by date. Unfortunately, typing in the time and date can be a bit of chore, especially if you re-boot between using different programs, so many people never bother. An easy way to solve this problem is to get a clock for your ST, so that every time you boot up the correct time and date are set automatically. Clocks are fitted as standard in Mega STs, and many hard drives also have them built in. If you have a standard ST or STE, there are a number of "cartridge clocks" on the market which simply plug into your ST's cartridge port. One of the latest to be released is the Alfa Data Clock from Gasteiner.

The Alfa Data Clock is equipped with a throughport, so you can plug in further gizmos such as scanners, samplers and the like, and the clock should not interfere with the workings of any second cartridge. The clock cartridge contains a small circuit board powered

by an inbuilt battery – these usually have a life of about five years. When the ST is turned off, the clock keeps going under its own power, keeping the correct time even if it is unplugged from the ST. The clock/calendar has to be "set" like any ordinary watch or clock, and you do this using a program supplied. Another small program also supplied has to be placed in the AUTO folder of your boot disk, enabling your ST to read the time and date from the clock when you next start up, and entering these details into the system automatically.

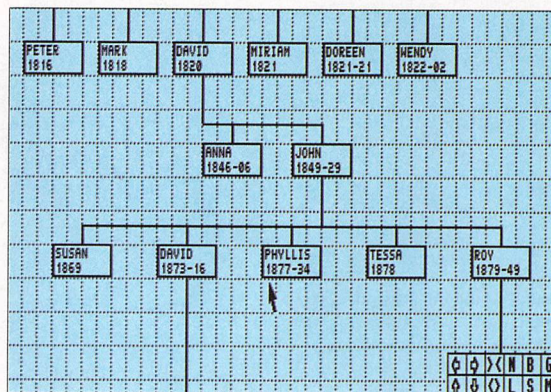
The clock hardware and software supplied work smoothly and with no problems, and a couple of Public Domain Desk Accessories are included for good measure. A clock is by no means a luxury item, but an essential add-on for the serious user, and models like this one with the throughport are preferable – after all, you never know what other cartridges you may acquire in future. If you want to treat yourself to a modestly priced but very useful piece of kit, the Alfa Data clock is worthy of your time and money.

PETER CRUSH

STF RATING: 80%

● This is the main family member database screen, where all the sordid details of someone's birthdate and place of birth can be entered. Hands up all those born in Milton Keynes.

Forename:				Surname:				ABII	
Mid Name(s):				Settled In:					
Sex:	☒ M ☐ F	Marriages:	0	Children:	0	Broth/Sist:	4	Flags:	A B C D E F
Religion:				Occupation:					
Born:		Place:		Parish:					
District:		Town:		County:					
Bapt:		Place:		Parish:					
District:		Town:		County:					
Died:	B	Place:		Parish:					
District:		Town:		County:					
not used:		notes:			notes:				
Marriage Parent Bro/sis Print Info Delete Unlink Search Zoom Screen									



● Part of the main work area of Family Roots, showing a selection of the author's family tree from the 19th Century. The box in the bottom right of the screen enables movement around the screen and access to the other functions of the program.

Get back to your roots

Family Roots

MACHINE: ALL STs

PRICE: £24.95

FROM: FLOPPYSHOP

CONTACT: 0224 312756

For all those who have a deep and not quite healthy interest in their origins, there is now a full-featured genealogical program for the ST from Floppyshop. The program is simple to use and with it you can create the most comprehensive family trees, complete with all the features required by professional genealogists.

The program is set up in such a way as to make the planning out of a family tree simple enough for a beginner to use. Selecting the New Box button on the main screen generates a box which may be placed anywhere on the chart. Click on the box with the right mouse button and a database page opens, enabling you to enter full details of the family member – such as the full name, sex, number of marriages, number of children, religion, occupation, birth date, birth place and place of death. All the usual things, really.

Click on the Marriage box and a new database screen opens, enabling a marriage to be created – it seems that children can only be linked to a parent if that parent is married to a partner. Not very practical, you might think, but marriages can be in either a church, civil or "other" form. Presumably the "other" marriage option can be used to signify

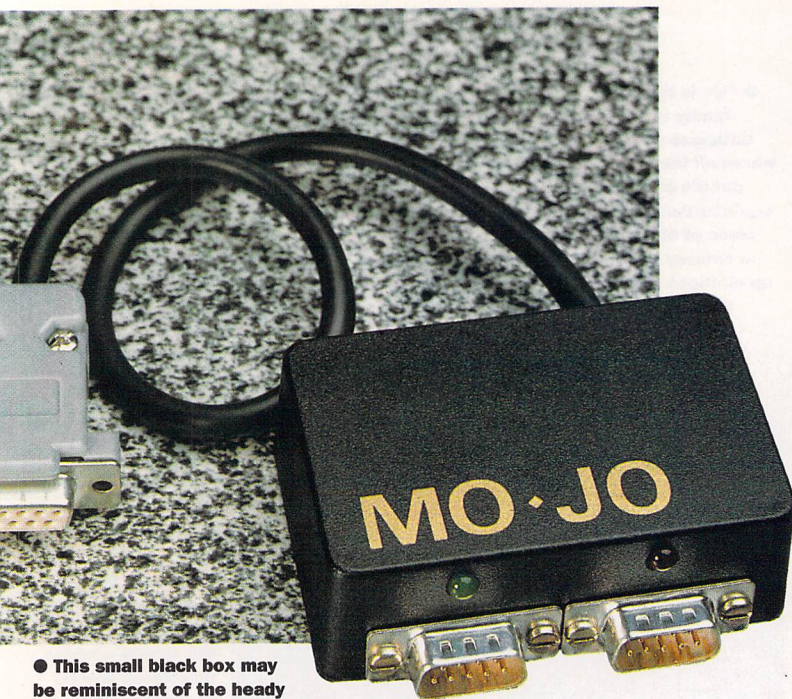
that parents are unmarried.

Once the main family tree has been created you can zoom in and out to show details of individual family members, add new children, move boxes around to new positions, add deaths, delete ostracised family members and so on. The work area is very large, enabling you to create enormously complex charts on a graph area 20,448 units wide by 4,600 units deep. Each box representing a family member uses up just four graph units of space on the chart.

Family Roots comes on a floppy disk in a hardcover folder. Full instructions are provided on-line from within the program itself. Although the on-line help deals with every aspect of the program, it would have been nice to have a printed manual as well for reference so that you could refer to it while entering data. The program works in both medium and high resolution on all STs and is simple to install onto hard drive – you just copy all the floppy disk files to a suitably named folder. All in all, the best genealogy program available for the ST and well worth the money if you are considering tracing your family.

CLIVE PARKER

STF RATING: 77%



● This small black box may be reminiscent of the heady days of Spectrum add-ons, but it is in fact an automatic mouse/joystick switcher for your ST. It saves you all the tedium of crouching under your desk to plug a second joystick in.

Now that's a switch

The Mojo

MACHINE: ALL STs

PRICE: £10.00 MANUAL VERSION, £13.95 AUTOMATIC VERSION

FROM: PD4U

CONTACT: 0232 672338

PD4U are better known as a PD library, although they do offer a memory upgrade service and can construct leads to order. Now hot on the heels of last month's Alfa Data mouse/joystick switch box comes another mouse switcher – this one's from PD4U and called the Mojo. An automatic switcher is a logic device which enables both a joystick and a mouse to be plugged into the mouse socket and detects a mouse button press or a joystick <Fire> button press. The unit then switches electronically to enable the relevant device to operate, thereby saving you the necessity of unplugging the mouse for two-player games which require two joysticks. Switcher units are designed primarily for the avid game-player who is likely to need to swap connections on a regular basis – serious ST owners are unlikely to ever need such a device.

The Mojo unit is designed in traditional add-on style: it is a small black box about three inches long by two inches wide with two 9-pin D sockets on the front face and a short lead which plugs into the ST's mouse port. There is an LED above each socket, and you plug the mouse into the D socket sporting the green LED and the joystick into

the socket with the red LED. The Mojo is powered by the +5v line from the mouse port, but the current drawn is negligible and will not affect the working of your ST.

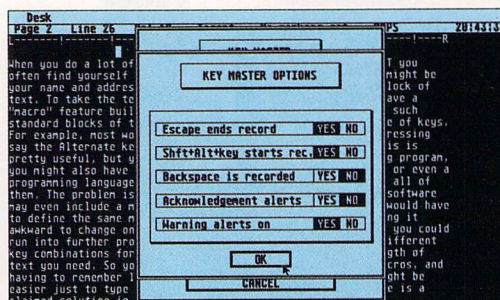
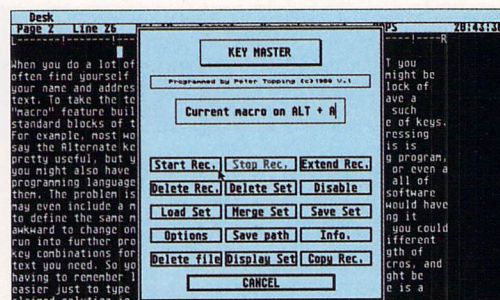
The unit defaults to mouse mode when you switch on your ST, but as soon as you press the <Fire> button on your joystick it switches to joystick mode. The Mojo also acts as a joystick switcher when plugged into the joystick port, enabling you to plug in both an ordinary joystick for platform games and shoot-'em-ups and a yoke-style joystick for flight simulations at the same time.

The Mojo is a small tidy unit which does not take up a large amount of space on your desktop. Although not quite as pleasing to the eye as the Alfa Data unit, the Mojo performs exactly the same function at a better price. The only small drawback is that the lead is not very secure when plugged into the mouse port – but a double-sided sticky pad is thoughtfully provided to hold it in place. If you want a mouse switcher, then get this one. For those on an even tighter budget, PD4U can supply a manual version of the device for only £10.

CLIVE PARKER

STF RATING: 77%

● Call up the **Key Master** Desk Accessory and you get this main screen. From here you can set the letter key onto which to record your macro, and choose many other options too.



● This dialog box enables you to fine tune certain operations possible with **Key Master**, and the accompanying well-presented 12-page manual goes into all the necessary details.

Macros mastered

Key Master

MACHINE: ALL STs

PRICE: £6.95

FROM: THE ST CLUB

CONTACT: 0602 410241

When you do a lot of writing on your ST you often find yourself typing in the same thing repeatedly – your name and address, some standard phrase or whatever. To make life easier, many programs have a "macro" feature built-in, enabling you to store such standard blocks of text and then input them by pressing a couple of keys. Pretty useful, but you might use several different programs and want the same macro in all of them. The problem is that not all these programs may even include a macro facility, and even if they do you would have to define the same macros in each of them separately, meaning a lot of work. And you could run into further problems. The programs are likely to use different key combinations for the macros and might not allow the length of text you need. So you could end up having to remember dozens of different key combinations – it might be easier just to type things manually!

Now there may be a solution – **Key Master** from the ST Club. It's a Desk Accessory, so it can be used from within any GEM program – and in this case, from within any TOS application too. It comes on a single-sided disk, and once you have loaded it into memory at boot-up you can simply hit <Alternate> and any given key to call up the macro you have defined onto that key. The macros can be up to a generous 100 characters in length, and any key that produces a click except the <Caps Lock> key can be included in your macro. You can define up to 26 macros

in a set, one for each letter key from A to Z – enough for most purposes and certainly enough to try to remember.

Usefully, you can define separate sets of macros for different purposes – one set for letter writing, another for programming, and so on. There is no limit to how many sets of macros you can have and they can be loaded in from disk via a central menu within **Key Master**. Recording macros is very easy, they can be saved to disk, and you can even merge one set with another.

Key Master is however not a perfect solution. Run it with **EdHak**, the Desk Accessory text editor, and the macros don't play back properly. This is because **EdHak** also uses the <Alternate> key for some of its own keyboard shortcuts, thus probably causing a clash of instructions. However, with any program that doesn't utilise the <Alternate> key the **Key Master** macro facility should work okay – though many DAs clash with various other programs, and you may need to employ some trial and error. This is not unreasonable, given the low price of this little utility.

If your WP already has a good macro facility and you don't need macros for anything else, you probably don't need **Key Master**. If however you are using a WP or text editor that lacks a macro feature, or you could use macros in programming or other specialised applications, **Key Master** may be a cost-effective solution.

PETER CRUSH

STF RATING: 75%

CITIZEN

ALWAYS A GOOD IDEA

Silica presents some great offers on the award winning range of high quality matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and output. Our confidence in Citizen's quality is such that we are pleased to include a 2 year guarantee with every printer. Plus, if you buy a Citizen printer (not inkjet) from us, we will give you the Silica Printer Starter Kit (worth £29.38), **FREE OF CHARGE!**

FREE DELIVERY
Next Day - Anywhere in the UK mainland
FREE STARTER KIT
Worth £29.38 - With every Citizen printer (excluding inkjet) from Silica.

2 YEAR WARRANTY
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Free Windows 3.0 driver.
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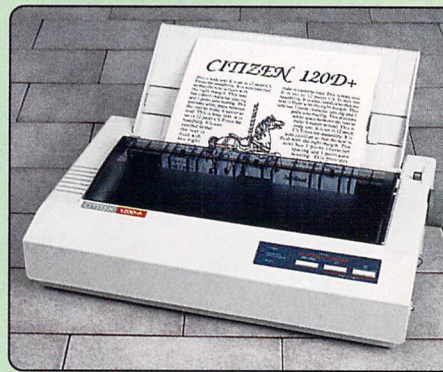
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Technical support helpline open during office hours.

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Citizen printers are manufactured to high standards.

DOT MATRIX PRINTERS

INK JET AND NOTEBOOK

LOW PRICE 9 PIN PRINTER



144 CPS **80 COLUMN**

- Citizen 120D+ - 9 pin - 80 column
- 144cps Draft, 30cps NLQ
- 4K Printer Buffer + 2 Fonts
- Parallel or Serial Interface
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- Epson and IBM Emulation
- Pull tractor & bottom feed
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£115
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RRP £199
SILICA STARTER KIT £25
TOTAL VALUE: £224
SAVING: £109
SILICA PRICE: £115

The Citizen 120D printer comes supplied with a parallel interface as standard. If you require a serial interface instead, please state ref: PRI 2125 when placing your order with Silica.

9 PIN PRINTERS

24 PIN PRINTER



FREE COLOUR KIT

300 CPS **80 COLUMN**

- Citizen Prodot 9 - 9 pin - 80 column
- 300cps Draft, 60cps NLQ
- 8K Printer Buffer + 3 Fonts
- Parallel Interface
- Graphics Resolution: 240 x 240dpi
- Epson and IBM Emulation
- **FREE Colour Kit**
- **FREE Silica Printer Starter Kit**

RRP £189
COLOUR KIT £41
SILICA STARTER KIT £25
TOTAL VALUE: £255
SAVING: £66
SILICA PRICE: £189
+VAT= £222.08 ref: PRI 2319

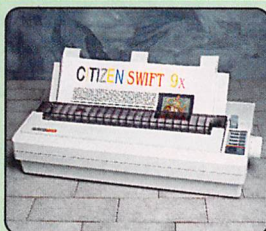


FREE COLOUR KIT

192 CPS **80 COLUMN**

- Citizen Swift 9 - 9 pin - 80 column
- 192cps Draft, 48cps NLQ
- 8K Printer Buffer + 3 Fonts
- Parallel Interface
- Graphics Resolution: 240 x 240dpi
- Epson and IBM Emulation
- **FREE Colour Kit**
- **FREE Silica Printer Starter Kit**

RRP £239
COLOUR KIT £38
SILICA STARTER KIT £25
TOTAL VALUE: £302
SAVING: £113
SILICA PRICE: £189
+VAT= £222.08 ref: PRI 2309



192 CPS **136 COLUMN**

- Citizen Swift 9x - 9 pin - 136 column
- 192cps Draft, 48cps NLQ
- 8K Printer Buffer + 3 Fonts
- Parallel Interface
- Graphics Resolution: 240 x 240dpi
- Epson and IBM Emulation
- Colour Option Available
- **FREE Silica Printer Starter Kit**

RRP £329
SILICA STARTER KIT £25
TOTAL VALUE: £354
SAVING: £105
SILICA PRICE: £249
+VAT= £292.58 ref: PRI 2309



NEW! LIMITED OFFER

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PRINTER + SOFTWARE + COLOUR

- Citizen Swift 24e - 24 pin - 80 column
- 216cps Draft, 72cps LQ
- 8K Printer Buffer + 6 Fonts
- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson, IBM & NEC P6 Emulation
- **FREE Colour Kit**
- **FREE Silica Printer Starter Kit**
- **FREE Lotus Ami 1.2 Word Processor and DTP package**
- **FREE Adobe Type Manager V1.15**

RRP £369
COLOUR KIT £38
SILICA STARTER KIT £25
LOTUS AMI 1.2 WPDTP PACKAGE £95
ADOBE TYPE MANAGER V1.15 (Font) £79
TOTAL VALUE: £586
SAVING: £337
SILICA PRICE: £249

+VAT= £316.08 ref: PRI 2544

24 PIN PRINTERS

INKJET PRINTER

NOTEBOOK PRINTER

FREE! STARTER KIT

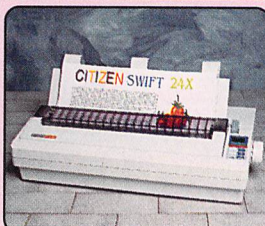


FREE COLOUR KIT

192 CPS **80 COLUMN**

- Citizen 224 - 24 pin - 80 column
- 192cps Draft, 64cps LQ
- 8K Printer Buffer + 4 Fonts
- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson and IBM Emulation
- **FREE Colour Kit**
- **FREE Silica Printer Starter Kit**

RRP £269
COLOUR KIT £38
SILICA STARTER KIT £25
TOTAL VALUE: £332
SAVING: £133
SILICA PRICE: £199
+VAT= £233.83 ref: PRI 2484



192 CPS **136 COLUMN**

- Citizen Swift 24x - 24 pin - 136 column
- 192cps Draft, 64cps NLQ
- 8K Printer Buffer + 4 Fonts
- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson, IBM and NEC P6 Emulation
- Colour Option Available
- **FREE Silica Printer Starter Kit**

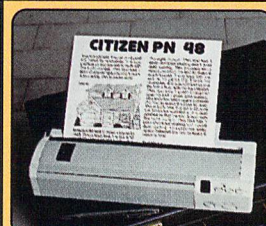
RRP £489
SILICA STARTER KIT £25
TOTAL VALUE: £514
SAVING: £165
SILICA PRICE: £349
+VAT= £410.08 ref: PRI 2574



360 CPS **80 COLUMN**

- Citizen Projet - inkjet - 80 column
- 360cps Draft, 120cps NLQ
- 50 Nozzle Head - Whisper Quiet 47dB(A)
- 8K Printer Buffer + 3 Fonts
- Optional HP Compatible Font cards
- Parallel Interface
- Graphics Resolution: 300x300dpi
- HP Deskjet plus emulation

RRP £499
SILICA STARTER KIT £25
TOTAL VALUE: £524
SAVING: £137
SILICA PRICE: £359
+VAT= £421.83 ref: PRI 2090



64 CPS **80 COLUMN**

- Citizen PN48 Notebook Printer
- Non-impact Printing on Plain Paper
- 53cps LQ - 4K Buffer + 2 Fonts
- Rear and Bottom Paper Loading
- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson, IBM, NEC P6 & Citizen Emulation
- Powered From Mains, Battery or Car Adaptor
- **FREE Silica Printer Starter Kit**

RRP £325
SILICA STARTER KIT £25
TOTAL VALUE: £350
SAVING: £101
SILICA PRICE: £249
+VAT= £292.58 ref: PRI 2100

This starter kit will help you to get up and running with your new Citizen dot matrix or notebook printer from Silica Systems. Plus, for a limited period only, we are including a Citizen Print Manager for the Amiga free of charge as part of the Silica Starter Kit. Bringing the total value of the free kit up to £44.33.

- 3 1/2" Disk - Amiga & ST Drivers
- 3 1/2" Disk - Driver for Windows 3
- 2 Metre Parallel Printer Cable
- 200 Sheets of Continuous Paper
- 100 Continuous Address Labels
- 5 Continuous Envelope
- Amiga Print Manager

The Amiga Print Manager dramatically enhances printed output. Provides drivers for all Citizen printers and replaces Amiga's normal printer preference system - printing is quicker, colours more vibrant, graphics less fuzzy. Easy to use with instructions.

- Features include:
- Improved Image Smoothing
- Gamma/Colour Correction
- Image Scaling
- Colour Separation
- Reduces/eliminates Banding

STARTER KIT £29.38
AMIGA PRINT MANAGER £14.95
TOTAL VALUE: £44.33

- ACCESSORIES**
- SHEET FEEDERS**
- PRA 1200 1200 £71.38
- PRA 1215 1240/224/24x/924 £88.70
- PRA 1228 1240/224/24x/924 £42.00
- SERIAL INTERFACES**
- PRA 1189 1200 £56.45
- PRA 1200 1200/924/1240/224 £32.35
- PRA 1709 Swift 24x/24x £26.38
- 5 Continuous Envelope
- Amiga Print Manager

32K MEMORY EXPN

PRA 1753 1240/224/24x/924 £13.10

PRINTER STAND

PRA 1242 1240/224/24x/924 £24.03
- PRA 1274 Swift 30x24x £30.98

ORIGINAL RIBBONS

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- RIB 3549 Swift 9x/9 Black £7.15
- RIB 3624 1240/24x/24 Black £4.70
- RIB 3638 224x/24x/924 Colour £15.83
- RIB 3248 PN48 Single Strike £3.81
- RIB 3248 PN48 Multi Strike £3.81

COLOUR KITS

- PRA 1236 1240/24x/24x £36.25
- PRA 1240 Swift 9x/24x £35.25

PN48 ACCESSORIES

- PRA 1148 PN48 Battery £51.70
- PRA 1155 PN48 Cable Extn £18.00
- PRA 1162 PN48 Car Adaptor £18.00

Accessories prices inc. VAT & delivery

SILICA SYSTEMS OFFER YOU

- **FREE OVERNIGHT DELIVERY:** On all hardware orders shipped in the UK mainland.
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Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Systems we ensure that you will have nothing to worry about. We have been established for over 12 years and, with our unrivalled experience and expertise, we can now claim to meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Systems Service".



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SILICA SYSTEMS



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To: Silica Systems, STF0R-0892-80, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND A BROCHURE ON THE CITIZEN RANGE

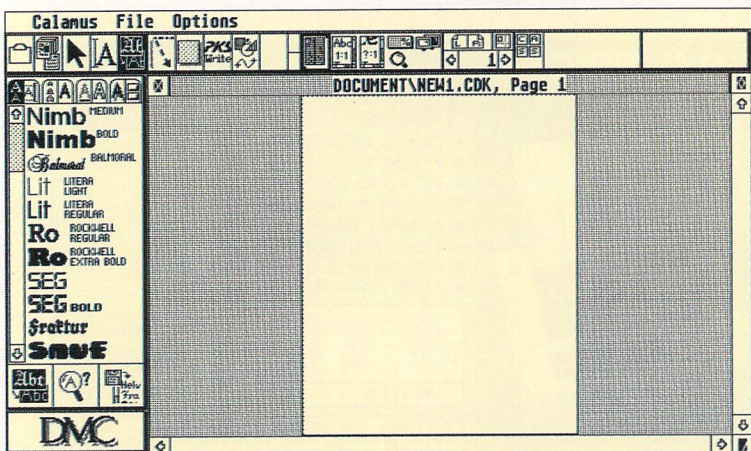
Mr/Mrs/Miss/Ms: Initials: Surname:

Address: Postcode:

Tel (Home): Tel (Work):

Company Name (if applicable):

Which computer(s), if any, do you own? 80B



● Ready for action – *Calamus SL* before editing begins. The scrolling font list on the left includes miniature bitmap images showing what each typeface looks like – an excellent feature.

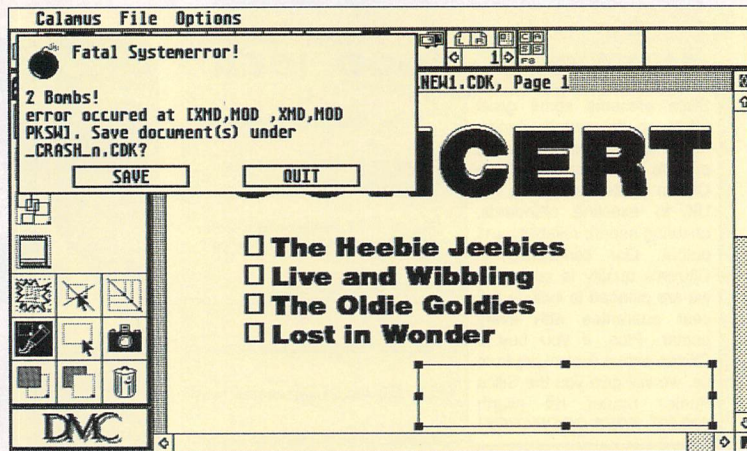
SL – WHAT'S THE DIFFERENCE?

Calamus had an excellent reputation before *SL* was available, so is it worth upgrading? Not necessarily. In fact, for short documents the old v1.09n is easier to use and screen display is quicker. If your DTP ambitions don't extend too far, v1.09n may be all you need – and it's now just £139.00. But there are enormous advantages in the new version. Here are just a few:

- Sophisticated colour facilities
- Vertical justification in text frames
- Rotation and mirror effects for graphic frames
- Up to seven documents open at once
- Master pages inserted anywhere in document
- Text style tags
- Font caching and use of virtual memory
- Text compression and expansion
- *Pks-Write* text editor built in
- Mount and print module
- Speedline auto-tracing module
- Vector Graphic editing module
- Editing tools for grey-scale images

Also, you need to remember that *SL* is virtually a re-write of the old *Calamus*, so although it looks similar, internally it is quite different. *SL* is better at handling long documents, and overall accuracy has been improved.

If you want *SL* but don't need the colour handling, then a new program called *Calamus S* is to be released. Unfortunately, it's not that much cheaper, at £499.38. The rumour is that *Calamus S* works faster than *SL*, because there's no colour processing to think about, so it may be the best choice for monochrome work.



● *Calamus* doesn't often crash – but when it does, the program attempts to save any documents in memory before failing completely. It often works, too.

Any colour you like

Calamus SL

MACHINE: 1MBYTE AND HIGH RES MONITOR. 4MBYTE RECOMMENDED

HARD DRIVE: RECOMMENDED BUT NOT ESSENTIAL

PRICE: £587.50

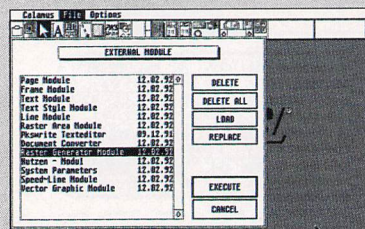
FROM: HALCO

CONTACT: 0734 441525

Calamus is part of ST folklore, for three reasons: fantastic features, awesome price and persistent bugs in the earliest versions. The bugs were eventually squashed, the classic *Calamus*

v1.09 is now available for the bargain-basement price of only £139.00, and the latest version, *Calamus SL*, boasts an even more remarkable range of features – though at not far short of £600 it is keeping the wallet-emptying tradi-

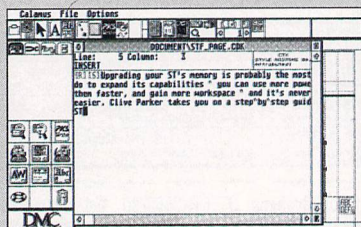
PLUG IN AND GO – SL MODULES



● *Calamus* modules are loaded, unloaded and executed using this dialog box. It can be useful to remove a module from memory if you are running short of RAM – provided it isn't a nything you're going to need. Many modules can also be executed from – you guessed it – icons on the main screen.

The new *Calamus SL* can accept modular sub-programs, which means that virtually any feature can be implemented if a suitable module is produced. Some of the modules are fundamental and *Calamus* would be unuseable without them, like the page module, the text module, the text style module, and the frame module. But what about the extras that come with the basic *SL* package? Here are some of the main ones.

PKS-WRITE



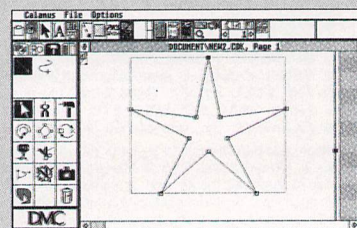
● *Calamus* has its own text editor, called *Pks-Write*. It's excellent – fast and responsive. You can insert text styles and rulers from within the editor, and there are also sophisticated search-and-replace routines

which work on text styles as well as words or phrases. There will be a spell-checker – but it is not yet implemented. The presence of a fast text editor within the program is one reason why *Calamus* is a lot easier to work with than *PageStream*, *Timeworks* or *Fleet Street Publisher 3*.

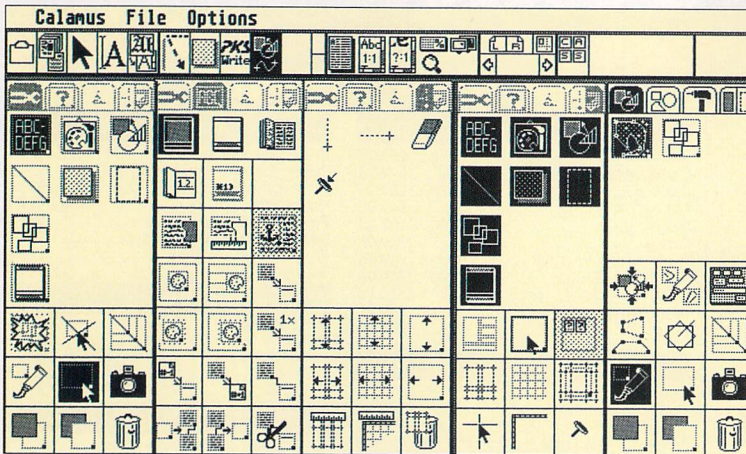
VECTOR GRAPHIC

Another superb module. It's almost a complete drawing program in its own right, with a comprehensive set of tools for editing, stretching, distorting and rotating vector objects. The full range of *Calamus* fill styles and colours is available. There are two important weaknesses, though: no snap-to-grid functions and no text capability. To add

text as a vector object (so you can stretch and distort it for special effects, headings and so forth) you need to prepare it using another program, such as *DMS's Outline Art* or even *Calligrapher's FlexText* utility.



● Stay on the trail, stranger! The Sheriff of Vector Gulch is a mite stretched.



● **Icon city** – almost every option in *Calamus* involves clicking on an icon. You can open several icon panels and move them around the screen, which is useful if you have an A4 monitor or detachable eyes.

tion alive. *SL* offers full colour processing, and like *Fleet Street Publisher 3* (£184.00 Silica ☎ 081 309 1111) it is modular, meaning that extra features can be bolted on using software packs from developers DMC or other sources.

So does it live up to its promise? And what can you do with *Calamus SL* that can't be done with *PageStream* (£169.00 from Silica) or *Timeworks*, (£119.95 Electric Distribution ☎ 0480 496666) for a fraction of the price?

Calamus is out on its own in more ways than one. For a start, it is the only major desktop publishing program to ignore PostScript. PostScript is a non-machine-specific page description language – a standard way of defining fonts, text and graphics. PostScript output can be printed on any PostScript printer, including professional typesetting machines. DMC have always claimed that *Calamus'* own system of scaleable fonts is superior, but the disadvantage is that to print a *Calamus* file to a typesetting machine, you need to find a bureau with an ST or TT – or buy your own typesetter for £15,000 or more. It also prevents you from using PostScript fonts or Encapsulated Post-

Script graphics without going to the bother of converting them first.

Another snag with *Calamus* fonts is that they are not "hinted," like those used in *PageStream* or *Calligrapher* (£99.00 Working Title ☎ 0865 883952). Hinting compensates for inaccuracies produced by printing at low resolutions or in very small typesizes, and without it *Calamus* fonts tend to be somewhat over-bold at small sizes, especially on dot-matrix printers. This may not matter much in practice, though, if you have a high resolution printer, and a PostScript conversion module called *Dataformer* is promised.

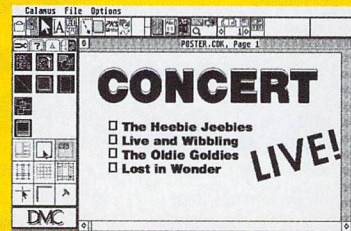
Other forthcoming modules include a table editor, a formula editor, a paint program, and even a music notation program. It's a very neat system, although past experience suggests that some of these modules may take a long time to arrive. If you need PostScript now, try another program such as 3K's *Didot Professional* (CGS ☎ 081 686 8121).

SUPERB FEATURES

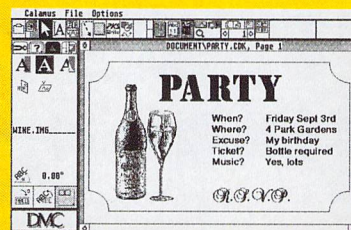
Even as supplied, *Calamus* has many superb features. It employs "virtual

WHAT'S IT FOR, THEN? – USING CALAMUS

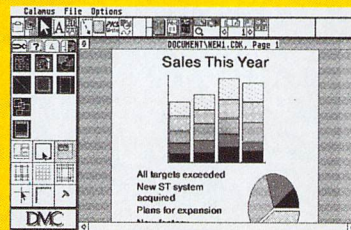
What kind of document is *Calamus* most suitable for? It's very flexible, though some important features are not yet available. Mathematicians are going to struggle until the formula editor arrives and business people are likely to notice the absence of any table making facility. But for magazines, books, posters, letterheads, invitations, and more, *Calamus* is ideal.



● The shadow effect and rotated text can be used to good effect when creating posters. *Calamus* can support huge page sizes and huge point sizes; there is also a tiling option when printing, so you can print on several sheets and stick them together afterwards.



● Party invitation? No problem with *Calamus*. Something like this can be knocked out very quickly. The border is one of the standard shapes for a Raster Area frame.

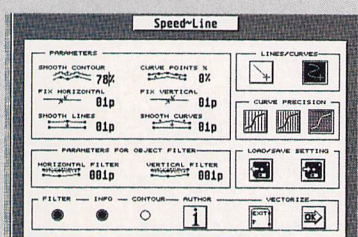


● *Calamus* is not ideal for this kind of document. The Vector Graphics module is hopeless for graphs, with no grid snap and no facility for adding text labels. That means finding a good graphing program which exports a format *Calamus* can handle. Come on, DMC – how about another module?

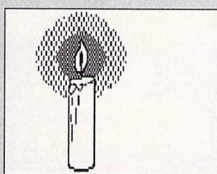
memory," which means you can allocate a portion of your hard drive for the ST to use as if it were RAM. If you have a big hard drive you are never going to run out of memory – even during complex processes such as calculating colour separations for large documents with colour graphics. If you haven't got a hard drive, *Calamus SL* really isn't for you anyway.

Equally clever is "font caching." Since *Calamus* vector fonts are of no fixed size, they must be scaled into appropriate bitmap fonts before they can be displayed on-screen or printed. This can be a lengthy process, causing slow screen updates when you zoom in on a document or move around the page. To overcome this problem, *Calamus* stores temporary bitmap fonts in a

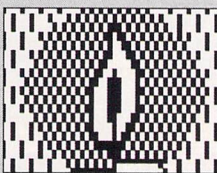
SPEEDLINE



● Converts bitmap images into vector drawings. It sounds brilliant: take a scanned picture or logo, for example, and convert it to a vector drawing that can be scaled or distorted without any loss of quality. *Speedline* is also extremely fast in operation. On the other hand, many bitmap graphics do not convert well. As a rule of thumb, simple line drawings like cartoons, maps or diagrams convert easily; drawings with lots of shading and tints do not convert very well.



shouldn't prove to be too demanding for *Speedline* to convert.



effect here whenever you enlarge a bitmapped image. Vector images, stored as sets of instructions for drawing the image rather than as pixels, can be enlarged with no loss of resolution.

● To test out *Speedline*, we imported an IMG format picture of a candle. It's a simple line-drawing, so

● A close-up of the original picture shows the jagged curve of the candle flame. You get the pixelated



of the flame is now much smoother than in the original – but the outline of the flame glow is rather a mess. Looks like the *Vector Graphic* module is needed to touch it up.

COLOUR SEPARATION

This module is at the heart of *SL's* colour capabilities. Colour printing is carried out by printing the same sheet of paper four times over, using a different colour ink each time – cyan, yellow, magenta and black. Combinations of these basic colours produce all the colours on any page – though sometimes the sheet is overprinted yet

again, to add "spot" colours with tints that are hard to reproduce by mixing, such as metallic gold or silver.

If it were possible to print with perfect ink on perfect paper, colour printing would be easy. In real life, a lot of skill is required to compensate for printing imperfections by adjusting the intensity of the four separate base colours. This is done with colour control lines, which map the original colours onto raster patterns – patterns of dots that optically produce different shades. Light colours are represented by light raster shades and dark colours by dark shades. Adjust this mapping and you can alter the intensity and contrast of the colour. Colour control lines can be set at frame level, page level, or for the whole document.

Since each of the four base colours has 256 levels of brightness, there are millions of possible combinations. On top of that, the red, green and blue combination which



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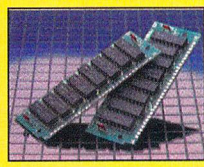
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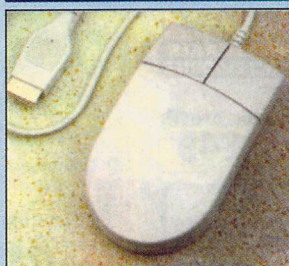
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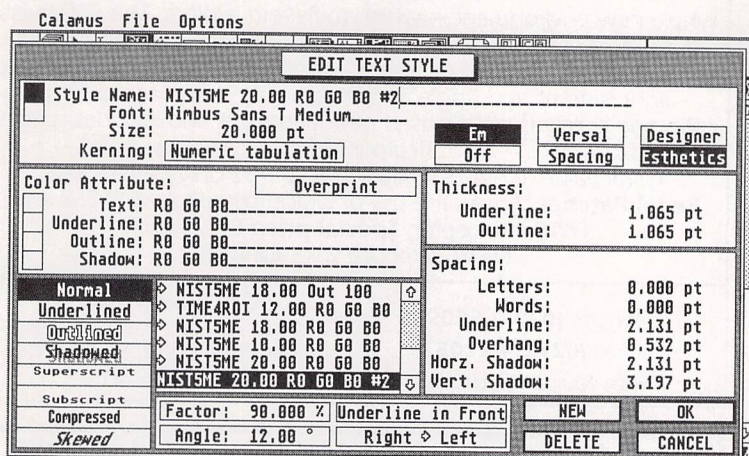


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● The new Calamus supports a system of style tagging. All the font details can be adjusted in this one dialog box, after which they get added to a style menu for future use. It's not the same as the paragraph tagging in *Timeworks* or *That's Write*, though: Calamus styles only control font details, and not paragraph spacing or indentation.

→ section of RAM called "cache memory" and uses these whenever possible.

Another brilliant feature is "virtual copying." Any frame – which can be a number of frames grouped together – can be duplicated as either a physical or a virtual copy. If it is a virtual copy, any amendment you make to the original is automatically repeated in all the virtual copies.

EASY TO USE?

Whether or not you find Calamus easy to use depends on how much you like icons. Only a few functions can be operated from drop-down menus; icons control virtually everything.

In practice, you soon get used to it. Some things are annoying, though – even hardened users sometimes find they create a frame or object when they meant to select an existing one, because the relevant icon is not visible. And some features are not particularly intuitive. For example, you carry out some changes by modifying the text ruler. Text rulers are activated by selecting text mode, right clicking in a

text frame, and then left clicking on the ruler. When you have made a change, perhaps to the justification or tabs, you have to right click to confirm the change – otherwise, nothing happens! This sort of thing is not clearly explained in the manual, and can lead to frustration when you are learning the system.

Other features are excellent – like the help text that appears whenever the mouse pointer is over an icon. This shows not only the name of the function but also where a full explanation can be found in the manual. Also superb is the zoom control – simply "rubber-band" an area of screen (click and drag an outline around it) to zoom in on that point.

In the end, it is because Calamus offers so many options that it can prove confusing – but it's worth persevering for all that power.

STRANGE WEAKNESSES

Even Calamus SL, however, has some surprising weaknesses. There is no easy way to create a bullet paragraph,

for instance, although bulleted lists are one of the most commonly used effects in DTP. You cannot change paragraph spacing without inserting a new text ruler, which makes it awkward to put extra space above sub-headings, for example. Inserting drop capitals too is laborious. You cannot change the size of type by stretching a frame – as you can in *PageStream* and *Fleet Street Publisher 3* – which makes it hard to enlarge a heading to fit exactly over a column of text.

These omissions are puzzling, because these features seem trivial compared to other Calamus achievements, like enabling you to rotate text in increments of one hundredth of a degree, type from right to left, define the precise picture shape for text to run around or select from eight different directions of shadow with user-defined offset and tint.

THE PROFESSIONAL CHOICE

As you'd expect for this kind of money, Calamus SL has a distinctly profes-

sional feel to it. Features which seem irrelevant to the casual home user may make all the difference in the printing world – things like raster generation for improved colour reproduction, colour separation control lines, or the ability to specify font size in increments of one thousandth of a point. For turning out a party invitation, the likes of *Timeworks* or *PageStream* may actually be a better choice; for producing a magazine or book, Calamus is superior by miles.

There are frustrations: reprogramming Calamus in modular form cost DMC a lot of time, and some functions are still not implemented – like the spellchecker and the macros. But what there is works well and looks reliable, despite the occasional crash. Calamus SL is already outstanding. Given a little more development and a few more modules, there will be nothing to touch it. As it is, the program is sure to appeal to professional DTP users who require sophisticated features and are prepared to pay for them. Calamus SL is very pricey but very slick.

TIM ANDERSON

CALAMUS SL

£587.50 Halco ☎ 0734 441525

FEATURES: 85%

Bursting with features for professional page layout, but there are one or two strange absences.

SPEED: 90%

Not quite as fast as the old Calamus on short documents, but considering what happens underneath the surface the speed is remarkable.

EASE OF USE: 85%

New users could get lost in a forest of icons; but once you used to the system it becomes second nature. Superb zoom facility.

RESULTS: 90%

Output is never less than excellent, even on a humble dot matrix printer. Also drives professional typesetting machines at amazing resolutions.

THE COMPETITION

Timeworks 2 (£129.25 GST ☎ 0480 496666) is fine and reliable for casual use, but primitive by comparison.

Fleet Street Publisher 3 (£199.00 Silica ☎ 081 309 1111) is slower and poorly supported, with limited font availability and no colour support.

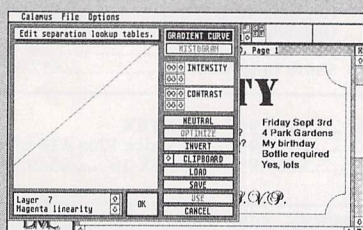
PageStream 2 (£199.99 Silica) comes close in some departments, but is less sophisticated and suffers from important bugs and slow screen update.

Didot Professional (£499.00 CGS ☎ 081 686 8121) is better for text effects and PostScript support, but less suitable for multi-page documents.

STF RATING: 89%

Superb – the best DTP package on the ST. Just one or two niggles to sort out, and then there'll be nothing to touch it.

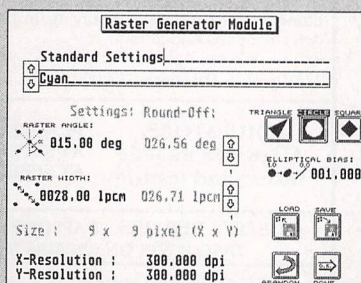
controls the screen display of colour graphics can also be edited individually for each frame. For grey-scale images, the intensity of the levels of grey can be adjusted in a similar way. Overall, Calamus SL offers a high degree of colour control – but you need a course in printing technology to make best use of it.



● Here, the control line for magenta is being edited. You don't need to edit the colour line by hand, because intensity and contrast can be adjusted using the buttons provided. To achieve very

precise compensation for particular printers, however, manual editing of the control line may be needed. When you've found a setting you are happy with, you can save it to disk for use in other documents.

RASTER GENERATOR



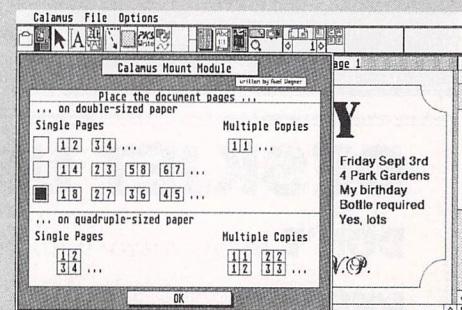
● Controlling raster points with the Raster Generator for improved colour display. Here cyan is being edited.

In colour printing, where one colour is printed over another, the way the dots are printed on the page is a major influence on the final result. If you looked at a printed colour page under a microscope, you would see that the individual dots are not exactly superimposed but overlap, with white space round them as well.

Calamus SL therefore gives you control over the shape of the dots, the angle of the dots in relation to one another and the resolution – the number of dots per centimetre.

THE MOUNT MODULE

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● Aspiring publishers can make use of the Mount module, which can print camera-ready finished pages.

where the sheets are to be folded after printing. Mount works out which page goes where, so when you print the pages out on either film (for serious purposes) or paper (for normal purposes), they are all in the right place. Just like this magazine really.

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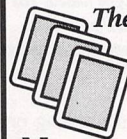
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****Listing 1 - Low resolution graph plotter for Lorenz equations ****

Rem Set up constants

A=10

B=28

C=8/3

Dt=0.01

Detail=10

Rem Set up initial values of variables

X=1

Y=1

Z=1

Plot -1,0

!Move to starting point

Hide

!Hide mouse pointer

For T=0 To 319

For Dummy=1 To Detail

Dx=A*(Y-X) !Calculate changes in x, y
! and z

Dy=B*X-Y-X*Z !

Dz=X*Y-C*Z !

X=X+Dx*Dt !Calculate new values for
!x, y and z

Y=Y+Dy*Dt !

Z=Z+Dz*Dt !

Next Dummy

Draw To T,200-Z*3.5 !Plot the line

Next T

Repeat

Until Mousek<>0 Or Inkey\$<>""

This program can be broken down into two main sections. The first is the initialisation of all the constants and variables. The second is the loop in which successive values of x, y and z are calculated and where z is plotted vertically against time. It is important that all three variables are calculated, even though only one is displayed, because all of them interact.

The kind of output you can expect from Listing 1 is shown in the picture below. No numbered axes are shown because actual values are irrelevant here. The graphs produced are not especially pretty to look at, but they do enable you to spot the non-periodic repetition of similar events with relative ease. An example of such an event is the vertical oscillation which gets larger and larger before collapsing and beginning again, with a slight difference.

There are several experimental alterations that can be made to the program. The most obvious things to change are the values of the constants a, b and c and the initial values of x, y and z. You could

With all the technological advances of the last few decades, you'd think they could at least get the weather forecasts right. In this third part of our series on chaos theory, Conrad Bessant explains how chaos gets in the way and how your ST can tell you things you never suspected about butterflies

It all began back in the '50s. With the advent of computers – even if they weren't a patch on the ST – meteorologists began trying to create mathematical models of the weather so they could predict what it would do next. Seeing that the sea and the air are fluids, a research programmer named Edward Lorenz simplified the weather down to a fluid dynamics system. He used 12 interacting equations, each representing a different element of the weather. Although the model was very simple, its results were very realistic: everything that happened followed from what had happened previously, and though it was by no means random the exact same series of events never happened twice.

The program was rather slow, however, so to speed it up Lorenz eventually trimmed the model down to these three equations:

$$\begin{aligned} \frac{dx}{dt} &= a*(y-x) \\ \frac{dy}{dt} &= b*x - y - x*z \\ \frac{dz}{dt} &= x*y - c*z \end{aligned}$$

Here x, y and z are variables, each representing a different aspect of the weather, and a, b and c are constants.

These equations are used to find not new values of x, y and z, but the rate of change of these variables. For example, $\frac{dx}{dt}$ represents the rate of change of x, or more explicitly the (small) change in x

(dx) that occurs in the (small) time dt. The equations were designed for small changes, so to calculate a large change you have to carry out a series of small ones.

To find the actual values of x, y and z, you repeatedly add the change in the variable (say, dx) to the previous value of the variable (here, x). These values of x, y and z are then fed back into the equations to calculate the next set of changes. The act of feeding the old results into the equations to get the next set of results is called an *iteration*, and the Lorenz model is therefore known as an *iterative* process, like the May equation (last issue) and the set of rules that produces the Sierpiński gasket (STF 35).

Try it a few times and you get a set of numbers like these.

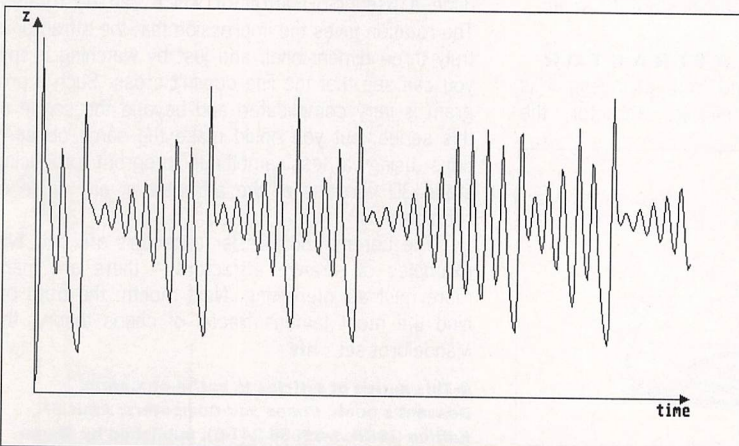
iteration 0: x=1.000, y=1.000, z=1.000

iteration 1: x=1.00, y=1.260, z=0.983

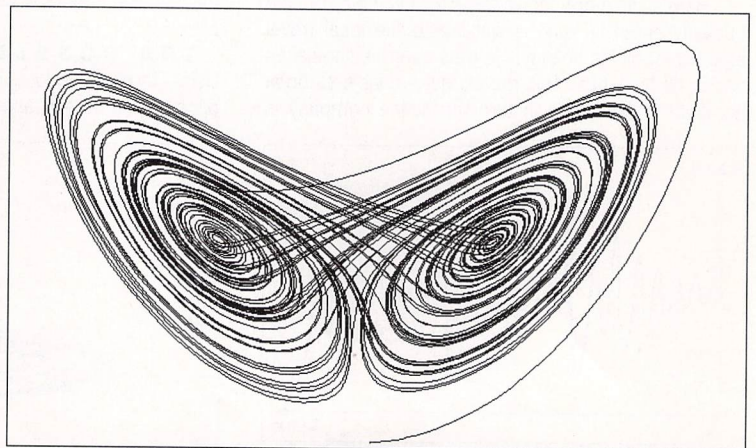
iteration 2: x=1.026, y=1.518, z=0.970

iteration 3: x=1.075, y=1.780, z=0.959

These figures meant a lot if you could decipher them, but general trends and repetition were hard to spot. Obviously a graphical representation is better. A simple line graph of some of the information can easily be created on the ST with the aid of a simple program, such as the one given in Listing 1. This plots the value of z against time, giving a single line which can loosely be described a forecast of one of the three weather aspects of Lorenz's model.



● A typical Lorenz time series graph produced by Listing 1. There are similarities even though there's no identical pattern repeated – just like the weather, almost.



● The Lorenz attractor, produced by Listing 2 on this issue's Cover Disk. The line never intersects itself. Honest. Look, try it on your own ST if you don't believe us.

also change the DRAW TO call to plot x or y instead of (or as well as) z.

THE BUTTERFLY EFFECT

Lorenz's carefully planned experimental models were very enlightening, but probably his most important discovery was accidental. One day when he was in a hurry, he restarted calculations using values of x, y and z taken from an earlier printout, rounded off to three decimal places.

To recreate what happened, first alter the relevant lines in Listing 1 so that the initial values of x, y and z are set up as follows. (It is important to type the numbers in full.)

X = 8.1646812788

Y = 8.9676166531

Z = 25.500286726

These numbers are of the same precision as those used internally by GFA Basic – to 11 significant figures. Execute the program and you get a graph similar to the black line in the picture below. However, observe what happens if the program is executed with the initial values rounded off to four significant figures. Change the relevant lines to read as follows:

X = 8.165

Y = 8.968

Z = 25.50

The output from these less precise initial conditions is shown as the grey line in the picture. The two lines follow the same path for the first few iterations but gradually diverge into totally different patterns. This effect is technically known as *sensitive dependence on initial conditions*, meaning that the even the smallest difference quickly grows into a large difference.

Lorenz realised immediately what his results meant. If the weather had a sensitive dependence on initial conditions, weather prediction was practically impossible, because even the smallest error from a thermometer or other instrument would send a forecaster's model off down an increasingly wrong track. Other meteorologists took a more optimistic view, believing that they could alter future weather by making small changes such as heating small areas of land. They may have been right, but Lorenz pointed out they could not control the weather with any precision, since the effects of the small changes they made would be impossible to predict because other, undetected, small changes would have equally large results. Some maintained that a complex system like the weather was so sensitive that the path of a hurricane could be altered by a butterfly flapping its wings on the other side of the globe. Hence the name "butterfly effect" was coined as the common, and more elegant, term for sensitive dependence on initial conditions.

Here's a more down-to-earth example of the butterfly effect. A man is walking to the local travel agent to book his holiday. He trips over his shoelaces and is hit by a bus. This means he is unable to book his flight in time, and in turn the airline company is

one person short of the quota needed to make the flight financially viable. The flight is cancelled, and without the income from that flight the already troubled company goes bankrupt. Unlikely, but it could happen, and it would be almost impossible to predict.

THE LORENZ ATTRACTOR

The Lorenz model has three variables – three directions in which it can change – and is therefore said to be three dimensional. This means that instead of simply plotting a graph of one variable against time you could plot all three. The shape produced is known as the Lorenz attractor, an infinitely long complex spiral which never intersects itself. Plotting it in all three dimensions is rather involved and unnecessary, because a good representation can be achieved by plotting z against x in two dimensions. The figure below shows the graph that results, but to fully appreciate the line's behaviour it is necessary to see it being drawn. Just load up GFA Basic and run Listing 2 to see it for yourself. The Listing is on the Cover Disk, in both a low res and a high res version.

The word "attractor" is a piece of mathematical jargon used to describe a set of points, in an imaginary mathematical space known as phase space. Each point on the attractor represents the state of the system at a particular time, and the line showing the sequence of these points is known as the trajectory. By looking at the trajectory of the attractor you can determine the behaviour of the system. The idea of attractors has been around for some time, but non-periodic attractors (called *strange attractors*) such as the one created from the Lorenz model are relatively new.

As Listing 2 shows, the trajectory behaves unpredictably, switching from lobe to lobe almost at random, but it is constrained within a certain range. One of the curiosities of the line is that it never intersects itself – that's what "non-periodic" means; if it did, it would rejoin its old trajectory and periodically repeat – although on the two-dimensional ST screen it looks as if it does. However, if you believe this you must also believe that an infinitely long line can exist in a finite three-dimensional space. Like many chaos ideas this obviously contradicts fundamental laws of physics, but in fact this is possible if the space in which the line is enclosed is what is known as folding space. Even fundamental laws aren't safe from chaos, you see.

The butterfly effect raises an interesting question: what is the real Lorenz attractor? Lorenz drew his first diagrams using output correct to six decimal places. GFA Basic has a precision of ten decimal places, so its output is different from Lorenz's. Who is right? A good question, but although the values may differ the general characteristics are the same.

THE RÖSSLER ATTRACTOR

Using three equations derived from chemistry it is possible to draw another strange attractor, the

TRY IT YOURSELF

The three listings in this article can be found on the Cover Disk, in the CHAOS folder. Low and high res versions of each program are included. The files are:

- LIST1_LO.GFA Low resolution graph plotter for Lorenz equations (Listing 1)
- LIST1_HI.GFA High res version of LIST1_LO.GFA.
- LIST2_LO.GFA Low res Lorenz attractor plotter (Listing 2).
- LIST2_HI.GFA High resolution Lorenz attractor
- LIST3_LO.GFA Low resolution Rössler attractor program (Listing 3)
- LIST3_HI.GFA High resolution Rössler attractor

To load the files start up GFA Basic 3 and chose Load from the File menu or press <F1>. Then choose the program you want from the fileselector. To run a program select Run from the menu bar or press <Shift> <F10>. The complete GFA Basic 3.5 was yours with STF 35 – if you missed that issue, turn to page 40 now!

Rössler attractor. This exhibits all the same features as the Lorenz attractor, but is a different shape (see the illustration). The equations are as follows:

$$\begin{aligned} dx/dt &= -(y + z) \\ dy/dt &= x + y * a \\ dz/dt &= b + z * (x - c) \end{aligned}$$

Listing 3 on the Cover Disk draws this attractor. Note that in most respects it is the same as the Lorenz program (Listing 2), except that the three equations are different and a 3D effect is created by plotting $y+z$ (instead of just z) against x. Again the constants and initial variables can be altered to produce a subtly different Rössler attractor.

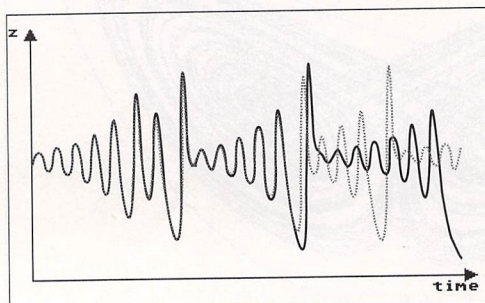
FURTHER EXPERIMENTATION

The trajectory of a strange attractor never intersects itself. Because the attractors are three dimensional but the ST's screen is only two dimensional it often looks as though intersections are occurring, where lines are actually passing behind or in front of one another. The simplest way of verifying that they don't intersect, without wading through a lot of maths, is to use colour to represent the third dimension. If each point is plotted in a colour proportional to the value of y in the program given in Listing 2 then, ideally, two adjacent pixels would be touching only if they were both of the same colour. However, the range of values for y is considerably larger than the range of colours on the ST, so this method is unworkable.

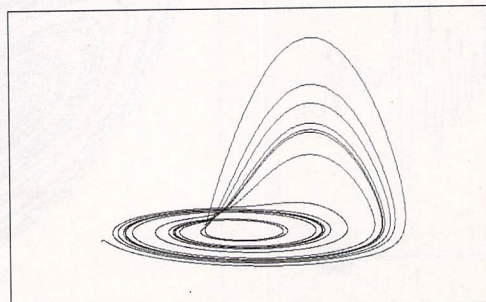
An alternative, and very impressive, way of getting round this problem is to write a program to produce a pseudo-3D attractor which can be rotated. The rotation gives the impression that the attractor is truly three dimensional, and just by watching it spin you can see that the line doesn't cross. Such a program is very complicated and beyond the scope of this series, but you could make the same observations using a less ambitious program producing static 3D versions of the attractor at any angle of rotation.

The Lorenz and Rössler attractors are only two examples of strange attractors – there are many more, just as interesting. Next month: the truth behind the most famous fractal of chaos theory, the Mandelbrot set. **stf**

● This series of articles is based on Conrad Bessant's book, *Chaos and Computers: Atari ST Edition* (ISBN: 1-85058-247-5), published by Sigma Press. Ask for it at your local book shop or order direct from Sigma on ☎ 0625 531035.



● Two weather forecasts show the butterfly effect – a divergence caused by small initial differences.



● The Rössler attractor, produced by Listing 3 – another strange attractor. Decidedly weird, in fact.

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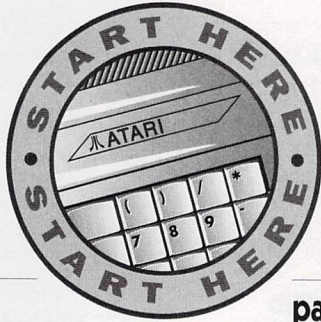
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Making the music



You have a MIDI keyboard and an ST sequencing package. You're all wired up and ready to write music. But where do you start? Why, right here of course! Steve Wright stimulates your creative juices in part three of our music series

Never made your own music before? Don't believe you – you did it at primary school with chime bars! But now you're in a position to take a quantum leap forward. With your ST and a multitimbral MIDI instrument, you have enough power at your fingertips to get amazing results even with no knowledge of music theory and no previous experience of playing any instrument.

There is no right or wrong way to make music. Everyone seems to develop an individual style of working. This method is just one of many possible approaches, so feel free to abandon it as soon as you feel confident enough. First, some general tips:

- ❶ It's best to get to know your sequencer fairly well before you start any serious work. Otherwise, your creative flow gets interrupted each time you have to stop to figure out how a particular function works.
- ❷ Try things out just for fun. It can be hard to work out a melody in your head and then try to find the right notes on a keyboard, but it's very easy to stum-

ble across a tune by trial and error. You may find your music coming out very different from the way you imagined it. Relax, enjoy it, and go with the flow.

❸ Aim for simplicity. Unless you are a virtuoso keyboard player, you're better off building up your song a few notes at a time, rather than trying to play everything in one go. It's one of the luxuries of sequencing, so take advantage of it.

❹ Save your work frequently.

❺ Take breaks. If you work for a long time on one piece of music, a strange thing happens – you start hating your music without being able to work out what's wrong with it. Nine times out of ten if you come back to it refreshed you can immediately hear what needs to be done. Spread your work over several days if necessary.

SETTING UP

Connect a MIDI lead from your keyboard's MIDI OUT to the ST's MIDI IN, and another from the ST's MIDI

WHERE CAN YOU START?

The complete *Sequencer One* was yours with *STF 30*, and we brought you a series of tips to help you get more out of it in *STF 33 – 35*. If you missed any of these, turn to the *STF* back issue service, page 40.

OUT to your keyboard or sound module's MIDI IN. Set your keyboard to LOCAL OFF if this function is available. Format a blank disk for your music, load your sequencer and get comfortable.

Your objective at this stage is simply to get a basic rhythm pattern, conveying the underlying feel of your music. This becomes a foundation onto which you can lay the rest of your instruments.

Begin by setting up your sequencer to cycle ("loop") round a few bars, using a time signature of 4/4 (four beats to a bar). Most music is constructed out of four-, eight-, 16- or 32-bar sections, so start with a maximum of four bars – you can easily lengthen the pattern later. (If you are using *Sequencer One*, the Start Position should be 1.01 and the End Position 5.01 to loop round four bars.)

Set the MIDI channel for Track 1 to whatever channel your drums are on (usually channel 10). Press a few keys on your MIDI keyboard to make sure everything is working properly and to get the volume level right. Set your sequencer's tempo to whatever you fancy – as slow as you like, if you think you may have difficulty playing it.

What you are about to embark on is loop recording. Ideally, your sequencer has the facility to "overdub" while loop recording. This means you can hear what you've done and keep recording as the sequencer loops round the four bars, adding more notes each time round. This is particularly useful for drums – it actually makes your sequencer behave very much like a drum machine.

The first drum sound you record should be one that can help you keep in time when you record the others – that is, the simplest part of your rhythm, such as a repetitive bass drum, snare drum or hi-hat.

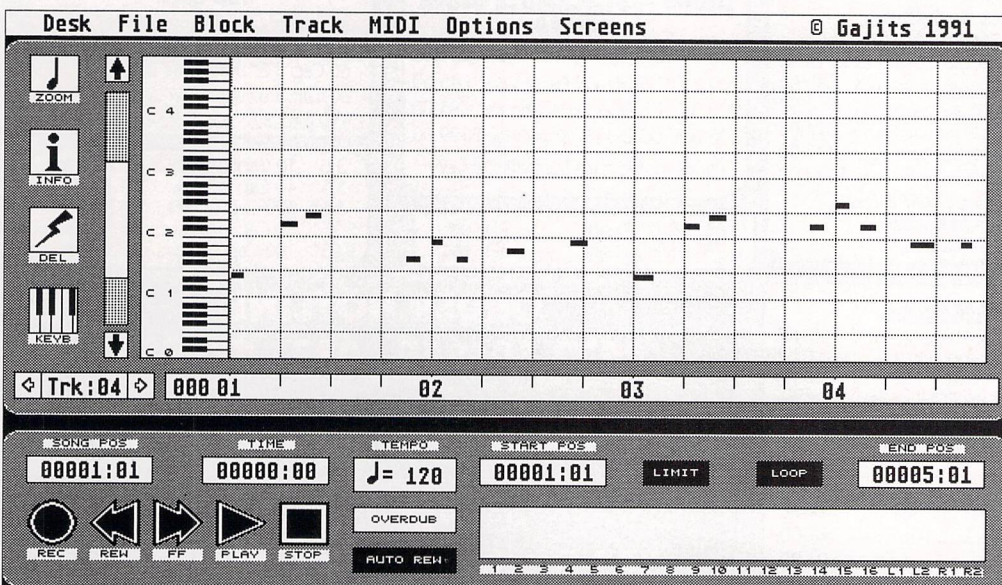
It's best to record all your music directly from your MIDI keyboard for the time being, even though step-entry methods may seem easier at first glance. In fact, keyboard entry is quicker and in many ways simpler – even if you're not a player. The method given here enables you to construct a song bit by bit – so you never have to play too much at a time.

Try counting the beats out loud as you play and playing your drum sound on a particular beat (or beats) of each bar. For example, you may decide to put a snare drum on every second beat (the "off-beat"), which would be every time that you said "two" or "four." Practise counting and playing in time with the metronome click before you actually start recording. When you're ready, go for it.

After listening to your take, use your sequencer's Quantise function to correct your timing. In a time signature of 4/4, quantising to the nearest sixteenth is normally suitable, although an eighth or even a fourth can work for very simple rhythms.

After you have recorded something you'll probably want to change it in some way, and you should feel free to make use of whatever editing systems your software provides – but bear in mind that it is often simpler to just wipe what you've done and try again, maybe at a slower tempo.

If you are happy with the first track, record another drum sound on the second track and another



● The Step Editor Screen from *Sequencer One*. This is where you can rectify mistakes and make adjustments after you have recorded. The little black rectangles are, in this case, bass guitar notes. Time is shown horizontally, while a note's pitch corresponds to its vertical position in the display. This screen enables you to make changes to any note's timing, pitch, length or loudness, and also add or delete notes. Total control!

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→ on the third. Three different drum sounds is usually a minimum for a basic rhythm. You could of course record them all into one track instead of having a new track for each one, but keeping them separate can be useful later on. You may, for example, decide to make the bass drum louder – much easier if it has a track of its own.

After drums, try recording a bass guitar. Select a new track and set the channel number to 1 (or 2 – some instruments don't respond on channel 1). When you play your keyboard, you hear a sound which may or may not be a bass guitar. To choose the sound you desire, either select it on the front panel of your instrument (consult the manual if necessary) or use the software to send a program change ("patch") message to your instrument. The latter is preferable because the sound you have chosen is saved to disk with the rest of your music data and automatically selected when you next load your music. Talking of saving – if you haven't done it yet, do it now!

Put the sequencer into PLAY, and try playing along with the drums. If you're not a musician, keep it simple – there'll be plenty of time to make things more complicated later on. Think of music as patterns, and experiment with playing patterns on your keyboard. Start with, say, three notes. Try playing them on one part of the keyboard and then playing the same pattern a little higher or lower. Try playing them in one order then in reverse order. Try repeating one or more of the notes. Try different speeds. Try leaving gaps. Try repeating the three notes over and over but with one note different every other time. If you get an idea, no matter how simple, just muck around with it for a while. This may sound amateurish, but it's exactly how many musicians work. When you get something you like the sound of, practise it a few times, then record it. Use a slower tempo if necessary. The only golden rule with bass guitars – don't play more than one note at a time.

Take stock of what you've done so far. Is there a track you don't like? If so, either delete it and re-do it,

If you get an idea, no matter how simple, just muck around with it for a while. This is exactly how many musicians work.

or, if you're not quite sure, "mute" it (switch it off) for now and try an alternative version on a new track.

If the bass and drums sound okay, proceed to another track, another channel and another instrument. Spend plenty of time trying out different sounds, but if you can't make up your mind choose something general purpose such as a piano for now. Remember once again that you are only trying to create a basic rhythmic backing, so don't try anything too adventurous at this stage. Find a two-, three- or four-note chord that goes well with your bass and try different ways of playing it – held down for short time or a long time, evenly or unevenly spaced. Once you've got a chord which works, try treating it like a drum – use it to add to the rhythm.

One of the great things about sequencing is that you can pick and choose sounds for the parts after you have played them. Pitched instruments – that's instruments other than drums and percussion – can be changed at any stage by selecting program changes. Drums and percussion sounds behave differently because there is a different sound for each key on the keyboard. To change them you need to

"transpose" them to another note. Most sequencer transposition functions deal in semitones, so count the number of keys (black and white) between the note you are currently using and the note that you want to transpose to, and you get the figure you need. If you are transposing down the keyboard, you may need to enter a negative number – in *Sequencer One*, however, you select an up or down arrow to indicate the direction of the transposition.

By now you should have something that sounds a bit like music. Although it has a kind of beat to it, it's only a few bars long and when looped probably seems rather boring and repetitive – in fact it may have already driven your family completely mad. This is normal. Explain to them that it isn't finished yet and proceed to the next stage.

MELODY AND VARIETY

Your pattern is only a few bars long at this stage, so start by doubling its length. Sequencers vary in the way that they handle this type of operation, but most have some sort of copy and paste facility. (In *Sequen-*

cer *One*, go to the Bar Editor Screen and then Select All before defining the block.) You need to select all tracks and all bars so far recorded, copy the lot, then paste to the beginning of the next bar. Repeat this doubling process if necessary until you get an eight bar pattern.

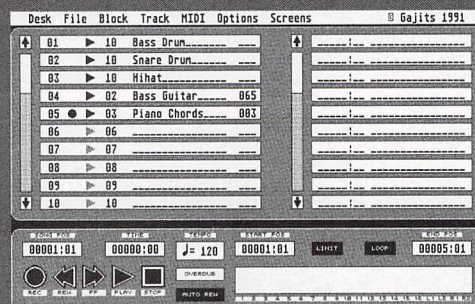
Open a new track and set it to your drums channel. With your sequencer set to loop around the eight bars, try playing some occasional tom-toms or other percussion with the music. Don't play all the way through the pattern, but try a simple flourish as you approach the end of the first four bars. Two or three notes is often sufficient – all you are doing is adding a bit of decoration to the rhythm so that it doesn't repeat exactly. Do the same over the last two or three beats of the eighth bar. You could try adding more snare drum notes here, but keep it as simple as possible – you only want to create a "nice touch," nothing more.

You can add more complex drum fills later if necessary, but if you overdo it at this stage your music sounds too "busy." If you get more than one idea,

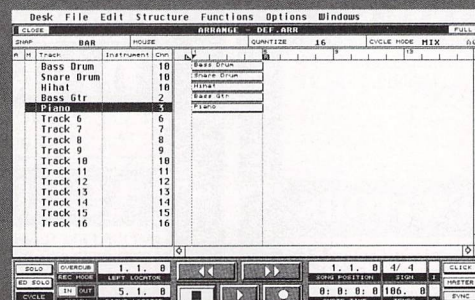
GET MORE FROM WHAT YOU'VE GOT

One of the fundamental principles of music is pattern and repetition, and your ST makes it easy to build up musical structures from any basic pattern. The procedure may vary a little

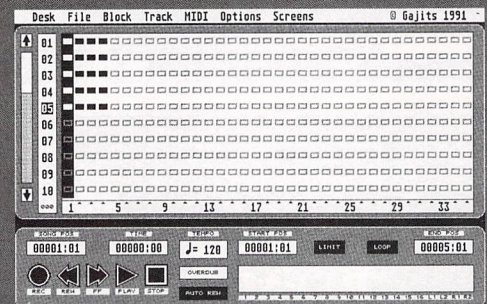
according to what software you're using, but here's how you double up a basic four-bar, five-track pattern to make eight bars in both *Sequencer One* and *Cubase*.



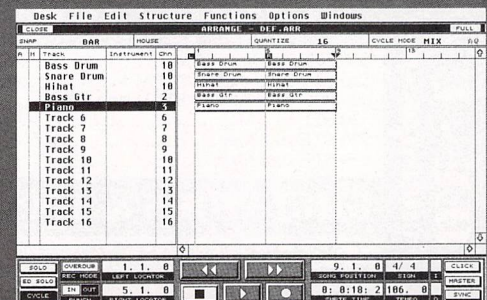
1A You have recorded four bars of music consisting of drums, bass and piano – your basic pattern. This is the Track Screen from *Sequencer One*, showing typical track names, MIDI channels and patch numbers. The start and end positions for the four bar loop (towards the bottom right of the screen) are set to 00001:01 and 00005:01 respectively. Between these two figures, the LIMIT and LOOP buttons are both highlighted.



2A *Cubase* uses a different kind of display. Once again, four bars of five-track music are shown. The start and end positions of the loop are shown in figures as 1.1.0 and 5.1.0 – *Cubase* calls these the Left and Right Locators, and they can be seen at the bottom of the screen just to the left of the transport controls. They are also graphically depicted by vertical dotted lines in the main display area.



1B The same point in the proceedings, but this time looking at the Bar Editor. Four bars of five-track music can be seen, with the first bar shown in reverse video (indicating the current song position). To double the length of the music, first click on Select All, then set your start and end positions by selecting all the four bars in any track. Copy to the clipboard, then double-click on bar five to set a new song position before pasting.



2B *Cubase* a few seconds later. The four bars have been selected, copied and pasted, giving eight bars of music. You could now create a new section by copying some of these tracks to the next eight bars and recording new material for the remaining tracks. It is by enabling music to be built up gradually in this way that sequencing software has opened the doors to people with little or no performance ability.

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→ use a new track for each one. You probably now have a pattern long enough to work as the basis for a complete section of music – a verse or a chorus of a song perhaps. If not, double its length again.

Now may be a good time to try practising and then recording a melody. If you don't play an instrument, this may be quite a daunting prospect, but have faith – it will come after a bit of trial and error. Open a new track and select a new MIDI channel and a new sound. If you are short of ideas, borrow some from the tracks you've already recorded – you could try making your melody line mimic the bass by using similar notes or rhythms, or make a point of using some of the same notes you used for chords. If the melody seems to get lost in the rest of the music, try playing higher up the keyboard, and use a sound which can be heard clearly over the other instruments – turn the volume up slightly on this channel if necessary. If inspiration refuses to come, or something sounds wrong, don't worry – just record your ideas no matter how imperfect they sound and then mute the track – you can come back to it later. There's no harm in recording several attempts on separate tracks, muting them as you go, but try not to let it become too complicated yet.

MAKING AN ARRANGEMENT

For simplicity's sake, keep the drums more or less the same throughout the piece. Select all the drum tracks and copy them to the end of your pattern. Your music should now last twice as long, with drums and pitched instruments on the first half of it and drums only on the second half. The second half is ready to have new parts added. (Another way of doing this is to copy all tracks, then decide which of them to delete on the second half.)

What should be put on the second section to make it different from the first? One of the laziest things you can do (although it can be very effective) is to use the same bass and chords as before, but transpose them to a different key. If you feel like trying this, save your song (in case you are just about to blunder), copy the relevant tracks from the first half to the second half, select them and transpose them. Don't transpose your drums or percussion, or they all start playing with the wrong sounds. The amount to

transpose is up to you, but it shouldn't need to be more than five semitones up or down. Some amounts sound better than others. Experiment.

Another, even lazier, option is to use the same parts as before yet again. Boring? It could be, but dance music often works very well with the same bass line and chords all the way through the piece. You could try using an old part but with a different instrument playing it. One way to do this is to copy the old part to a new track and channel, or you could keep it all on the same track and insert a program change at the desired point – consult your software manual on how to do this.

If you're not happy with either of the above options, press on with recording new parts for the second half. Exactly the same principles apply as before – just play something different this time. Be extremely careful not to accidentally record over something you wanted to keep. Save your work before you start, then set up your sequencer to loop around the second half only. If you are at the beginning of the song when you start recording, you will wipe off your previous work. *Sequencer One* has a "limit mode" which helps to prevent you recording over any other section of the song.

By now you should have two sections of your masterpiece sounding fairly complete. You should also be getting quite good at recording, deleting, copying and pasting music. However, two sections is rarely enough for a song. Record new material where you think it needs it, building up new sections track by track until you have three or four sections, all different in some way. A good formula to aim for is two sections of 16 bars each (this would be equivalent to verse and chorus) and one or two sections of four or eight bars. You can create shorter sections by copying the drums from only part of an earlier section.

Arrange your song by continuing to cut, copy and paste imaginatively. Let's assume that your two main 16-bar sections are called A (the Verse) and B (the Chorus), and you have a third, rather different section, C, of eight bars. You could make them into a basic structure for a song as follows:

1. Intro – the last four bars of Section B or C.
2. Verse 1 – Section A
3. Chorus – Section B

WHEN THINGS GO WRONG

1 "Hanging notes"

Everything is going along nicely, when suddenly one note refuses to stop playing. Don't start pulling plugs from the mains in a blind panic – you could electrocute yourself, or worse still lose all your work. The "hanging" note is a common MIDI fault caused by your synth or module failing to recognise a MIDI Note Off event for some reason. You can cure this by simply switching the offending instrument off and then on again, or by selecting "all notes off" on your sequencer if it has this feature.

2 Hanging pitch bend

If you're using pitch bend, you may sometimes find a track playing out of tune. This is because your synth or module has not been told to put pitch bend back to normal – a common occurrence in situations where you are using pitch bend right up to the end of a track or looped section. If your software enables you to, you can correct it by inserting zero pitch bend at the moment where the fault starts (but watch out – zero pitch bend has a value of 64, just to confuse you). In general, make a habit of recording pitch bend on a separate track if possible – pitch bend always affects instruments on the chosen MIDI channel, even if the notes are in a different track.

3 Notes which sound "late"

One of your instruments sounds as if the imaginary person playing it is suffering from a hangover and can't keep up with the others. This can seem inexplicable, because your ST setup enables you to place notes with absolute precision. It occurs because some sounds, particularly string and horn sounds, have a slow "attack" – they take quite a few microseconds to reach their loudest point before dying away. To cure the problem, shift the whole track earlier in time by a few ticks. *Sequencer One* has an Alter Times function to do this.

4 Notes which don't sound at all

You know you played it, but you can't hear it, or you can only hear a few notes here and there. If you've recorded lots of material, the most likely cause is that your synth has run out of polyphony – it simply can't handle the number of notes that you want it to play at the same time. (The amount of polyphony a synth has can vary enormously, and there's not a lot you can do about it other than to simplify your music or go shopping for another synth.) If polyphony isn't the problem, look for the obvious things – make sure the track isn't muted and check volume levels.

SOFTWARE SHORTCUTS, TRICKS AND EFFECTS

- 1 Copy a track – or part of it – to a new track. Put the new track to the same MIDI channel as the first, shift all its note times forward by a sixteenth (in *Sequencer One* that's 48 ticks) and reduce all notes velocities by about 50% (in *Sequencer One*, that's Scale Velocities by 0.5). The effect you get is an echo. Also try transposing the new track up by 12 semitones (one octave). This trick can be very effective for creating high-energy bass lines. (Think of Donna Summer's *I Feel Love*).
- 2 Copy a track as above, but this time give the new track a different sound. This is a very quick way of layering two sounds on top of each other, and works well with long chords when you want added richness. Try also blending bass sounds to make them more punchy.
- 3 Copy a part of a track to another instrument – for example, get the bass to play the melody for a few bars. Simple, but often surprisingly effective.
- 4 Use step entry to put in something that is so fast that no human being could ever have played it. Good for impressing people, but use it sparingly.

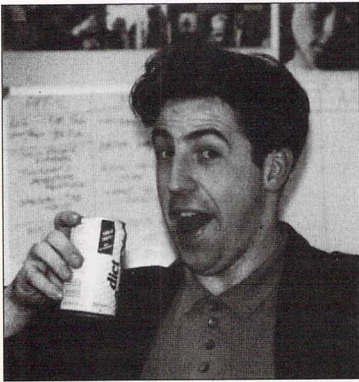
4. Verse 2 – Section A
5. Chorus – Section B
6. Middle Eight – Section C
7. Chorus – Section B
8. Chorus – Section B

This very simple arrangement would yield a song a little over three and a half minutes long at 120 bpm (beats per minute). When repeating entire sections, it's a good idea to record extra parts for some of them, or create variety by cutting instruments out, adding extra drum fills, varying the sounds used and so on. A general principle is to make the music get progressively more interesting, so you may for example want to cut out some of the instruments on the intro but add some embellishments on the last two choruses to help the song to "build" nicely.

Finally, your song needs an ending of some kind. Endings can be extremely simple, and you may only need to record one more bar. What you do for the ending depends heavily on the style of your music, but a single chord on the first beat of the bar can often suffice. A very popular alternative is the "fade out," where you just keep repeating the last section while turning down the volume for the whole song. This is more of a tape recording technique than a sequencing technique, although some sequencers have the ability to record gradual volume changes.

When you think you've finished, take a longish break and then listen to the piece one more time. Does it still need some finishing touches? If so, try some extra little bits of percussion, or a simple, quiet string part using long held-down notes or chords. Does it go on a bit in places? Experiment with muting and unmuting a track as the music plays, and if it works delete a few bars of it at selected points to break the monotony. Next stop, *Top of the Pops!* **stf**

● Next month, we get serious about MIDI with a guide to improving your MIDI setup. It's packed with practical advice about upgrading your music software and hardware, enabling you to build a powerful, professional MIDI studio around your ST.



PLAY A HARD GAME

Did you know that out of the entire Screenplay reviews section of *STF* 34, not one game was listed as hard drive installable? Take a look at some previous issues and you find that games that can be played from hard drive are very much in the minority. Why?

Look in the software shops and you find that, more often than not, PC and even Amiga versions of games support hard drives, but strangely the ST has the unique honour of doing without the hard drive option. Notable examples are the Microprose games *Gold* and *Special Forces*, which I would dearly love to purchase and play, but won't because I insist on protesting by only buying games that can be played from my hard drive.

I cannot offer an explanation as to why the ST is singled out in this way, but I can tell you why PC-compatible owners are not subject to the same problem. It is because the software houses know that the PC-owning world would take one look at a game that wasn't hard drive installable, laugh, remark on what a silly idea it is to produce software that does not support

Feedback

The face may have changed, but that's only because it's someone else. This is still the place to get what's on your mind off your chest... or something like that. Write to The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW

hard drive, and proceed to buy not a single copy.

This situation means that the ST can never compete as a serious option with the likes of the PC and even the Amiga, not because it isn't a very good machine but because the software support is laughable. I love my ST and having used PCs extensively can sincerely say that I much prefer it to the pains of MS-DOS and that sad excuse for an Apple Desktop known as Windows. However, if the present situation continues I will be forced to change my machine to one that offers a much better service from the software companies.

This is particularly upsetting when people such as yourself work so hard to further the ST. Perhaps you could run a campaign aimed at the programming teams and software houses and help safeguard the future of the beloved ST.

Mark, Staffordshire

stf: Traditionally ST games have always been on floppy disk because hard drives have never been standard kit for ST owners. PCs on the other

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hand can't function without at least 40MBytes of hard disk space. As a result, software houses started releasing games which were installable on hard drives. It did mean however that the software producers got lazy. Instead of keeping games small, compact and efficient, they allowed their programmers to create rambling odysseys which often spread onto ten disks. Now those same programmers find that they can't go back to the old ways, even though

their games are in no way superior to those on the ST which come on two or three disks. The other point is that if a program is installable on a hard drive, it's extremely easy to pirate. This doesn't seem to bother software houses for some reason.

SWAP SHOP

I have had my external disk drive (the excellent Cumana) for over two years now and I can count on my fingers how



THINGS THAT MAKE YOU GO HMMM...

Here's my top ten list of *Things That Make My Eyes Go All Red and Glowy and My Voice Shift Down Three Octaves While Causing Random Objects Within a 20-foot Radius of Me to Explode or Catch Fire, and Giving Me the Strong Desire to Break Things:*

- Milk bottles that dribble and end up pouring from the wrong end, going all over the table instead of into the bowl.
- *Lemmings* (the game, I mean).
- Neil Kinnock.
- Trying to get the lawnmower out of the shed.
- Trying to get anything at all out of the shed.
- Bruce Forsyth.
- People who at regular intervals place their head on the power pack region of their ST and go, "Blimey, it's warm! We've been using it for too long again," and then refuse to use it for several days while it cools down. Actually, could you nice guys at *STF* tell everyone that this isn't necessary unless you habitually keep your ST under the grill with several large pillows over the ventilation slots. They might believe you.

- Any form of alcohol.
- People who reckon that RPG games are occult. Where did they get that idea from? If Middle Earth Role Playing is occult, then I'm the Lord of the Nag-gert. (Which I'm patently not. Don't look at me like that.) Come to that, if Dungeons and Dragons is occult, so's *The Lion, the Witch and the Wardrobe*, *Hansel and Gretel*, *Chitty Chitty Bang Bang* and *Edd the Duck*. If it puts anyone's mind at rest I'm distinctly against occultism.
- Girls. Every time you say something funny, they think you mean it, and then you have to explain that it was a joke and repeat it again slowly; after this, they just look at you oddly and walk off. At least, that's what they do to me. Perhaps I'm missing something. Boys never do it though. Hmmm.
- Friends who get prizes for their letters in *STF*.
- Top Ten lists. There's never quite enough places to put everything you want in. Still, I don't let small problems like that stand in my way.
- Amiga owners.

By the way, Richard Desmond wrote in a while ago about the *Monkey Island* "#41 Heapful Game Over" message. I keep getting the same message even though I've got a 1MByte machine. If you press

<Control>-V during the game, it should tell you the version you've got. Mine says v1.0, so presumably this is the bugged version. Apparently, if you send it back to US Gold, they'll fix it for you. Ummm, that's it really. Heigh ho.

Julian van Eyken, Somerset

stf: Here are a few more sad everyday thoughts to ponder over. Why is it that you always run out of toothpaste, aftershave and money on the day you're going out with a girl for the first time? Why is it that mums are exceedingly pleasant to any girlfriends you bring home, until they've gone, at which point they say things like, "Her eyes are very close together, aren't they?" Why is it that if you wake up in the middle of the night it's always just in time to hear the birds bust a gut over their morning chorus, making it completely impossible to get back to sleep? Oh, and why is that when your joystick finally gives up the ghost it's always the up/left direction which goes first? As to the *Monkey Island* problem, if your copy is exhibiting those strange heapful problems send it off to US Gold Ltd, Units 2/3, Holford Way, Holford, Birmingham B6 7AX with a little note explaining what the problem is.



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much software actually uses it. Certain software houses do make use of it (well done, Microprose and Lucasfilm), but most seem to ignore it. There's nothing more annoying than having to keep getting up out of my seat when asked to swap disks. Wake up, software houses, and start making use of hardware.

D A Rutland, Sheffield

stf: I must agree with you on this one. It can't be terribly hard for programmers to build a check into their programs for an external disk drive – they've been doing it for years on certain lesser machines. How about it, software houses?

BLESS HIGH RES

I'd like to get the idea out of people's minds that there are no good games for a high resolution monitor. Here is my favourite ten high res games:

- 1 The Secret of Monkey Island. Best game ever! Praying really hard for Monkey Island 2.
 - 2 Starglider 2. Very hard but exceptionally good. Tips welcome.
 - 3 Wonderland. An excellent adventure.
 - 4 Proflight. Not really a game, but a brilliant flight simulator.
 - 5 Magnetic Scrolls Collection. A bit like Wonderland.
 - 6 Skull Diggery. Boulderdash style game.
 - 7 Loom. Monkey Island style game, but a lot easier.
 - 8 Flight Simulator 2. Very realistic. Wouldn't mind a Britain scenery disk.
 - 9 Megaroids. Public Domain, a bit old, but still a great shoot-'em-up.
 - 10 Imperium. Your chance to rule the universe. A humungous game.
- So there you are. Ten great games that all run on high res. Beat that?

Jonathan Hern, Aberdeenshire

stf: Well, can anyone beat that?

NEW AGE CRUSADE

I use my ST for a wide range of uses, including a fair deal of game-playing, and I have noted the decline of this end of the market. To help combat this I sent off your game campaign form (STF 34), as I'm sure did many others. But perhaps it is necessary to point out that there is no way we can do it alone.

I have no idea how much time and money it takes to convert a game to the ST and I do know that in some cases it can't be done, but surely Atari in all its wealth and wisdom realise that now is the time for them to pull their fingers out and do something. They could convert some demanded games themselves before the market is irrevocably damaged, because whatever you say, many people do use their ST mainly for game-playing and it is this group that will be so easily tempted to the other side by the lack of quality games appearing on the ST. I myself am

greatly upset that *Elite 2*, the sequel to a classic ST game, may never see the light of day. ST owners sell up because they're fed up with being pushed around or being ignored. So, Atari, I implore you, crawl out from behind your rose-coloured spectacles and do something before it is too late for you and the ST-owning world.

M Winter, Gloucester

stf: Bit of a plea if ever I heard one, so who better to deal with this accusation than Bob Katz, the chap who runs Atari's own software label, ARC. He said: "Because there are now more Atari formats we're pulling in important games licences that the larger software houses used to pick up. We're creating these licensed games just on Atari formats such as Lynx and in doing that we're financing ST-only games. Therefore, Atari owners are getting special titles which are only available for their machine. We're not working in conjunction with other companies so we're not living off the back of Amiga code." Bob points out that their game Steel Talons, which has just gone into production (available at Christmas), is being produced by the brilliant Vector Graphics team especially for the ST/STE. He tells us that it'll support all that spanky STE hardware like extra joystick ports

and increased colour palette. So there you go – Atari are doing something.

STRIKE A RICH CHORD?

I need some help from a programmer on a project I've undertaken. I've been working on some chord recognition software. All the donkey work has been done – the program recognises and describes over 3,000 different chords, including complex jazz chords (I'm a professional musician) – but I need help to finish it off. I need to hear from somebody who knows about MIDI programming, who would be interested in working with me to tidy the program up and make it work as a Desk Accessory (so that it could be used, say, with a sequencer), and who has some experience of selling or marketing software. A half share of the profits is on offer. Any takers? If interested call me on 081 892 1970.

Greg Chapman, Twickenham

stf: Anyone prepared to lend a hand? Let us know how you get on, Greg, it sounds like a brilliant program.

WHERE'S MY LLAMA, JETHRO?

Boy, did you blow it this time! Things were looking so promising, with a nice

ray-tracer and a beginner's guide to programming fractals (STF 35), but then you go and shoot yourselves in the foot with an article on astrology. The point is that whereas ray-tracing and fractals represent state-of-the-art maths and are ideally suited to the ST, astrology represents illogical mumbo-jumbo and isn't.

I'm not going to harp on about the fact that superstition is dangerous (although it is). I just think that seeing as astrology contravenes all laws of physics, and that computers depend on the laws of physics to function, it's a bit hypocritical putting an astrology program on one.

I realise that these programs have been written and are available so you have to review them for what they purport to be, but don't let computing get dragged down into the quagmire of superstition that dogs so many aspects of life. Don't try and tell me that you've got to keep an open mind about it either. It's all been disproved so many times and in so many different ways that it truly requires an act of Orwellian double-think to ignore the facts. If rational thought demonstrates that Santa Claus doesn't exist, you don't go on believing in him just because it would be really nice if he did.

On a completely different note, now that you've slung out that ridiculous Gallup chart (hurrah!) why don't you start up a reader's chart? This would give a much better idea of which games are any good (as opposed to selling well). Even the oh-so-hardworking Ed Ricketts can only spend a limited amount of time play-testing the games – a real purchaser gives them a proper going over and so is better able to rate the gameplay. Just a thought.

Tom Rees, Kent

stf: Science is a constantly evolving entity though, isn't it? I mean, if you'd been around in the 15th Century would you have complained about scientists who said the earth was round, or that the earth went around the sun? The simple fact is that science is constantly putting forward any number of theories, just so that two years later a Cambridge undergraduate can disprove the whole thing. Personally I don't believe in horoscopes any more than you do, but I think they're a sight more reliable than "expert" forecasts on the population explosion, the size of the ozone layer, the risks from HIV infection, the speed of global warming, the size of the universe and the wisdom of fattening cattle with chemicals. So there.

● Is something annoying you about the ST scene? Have you got something to get off your chest, or do you want to take up something in this issue's letters? Write to The Editor, Feedback, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW.

SHORT BUT SWEET

Recently I purchased *VideoMaster* from Micro Choice PD library for my video titles. I also chose *Film Director* as my gift when I subscribed to STF. Both of these excellent packages accept *Art Director* picture files, but since the collapse of Mirrorsoft I haven't been able to buy *Art Director* anywhere. Could you please tell me where I could buy it and how much it costs?

D L Rodgers, Sunderland

– Most of Mirrorsoft's back catalogue will have disappeared forever in a legal mire, so the chances of *Art Director* resurfacing are pretty minimal. You might like to try using a converter program available in the Public Domain called CV2IMG. This should convert *Art Director* files to IMG and vice versa. Try Goodmans PD library on 0782 335650.

Where can I get hold of a copy of *Tower FRA*? I thoroughly enjoyed *Kennedy Approach* on my Atari SE and would dearly love to buy a copy.

Max Howse, Northampton

– I do seem to remember this program being available years ago. Perhaps a reader would be willing to sell a copy. Any offers?

When I bought my ST in 1988, there was a game included called *SuperSprint* by Electric Dreams software. Unfortunately, it was wiped in a moment of carelessness. Can I still buy *SuperSprint*?
Richard Taylor, Lancashire

– Try the *We are the Champions* compilation from Ocean 061 832 6633.

The Future (no pun intended) for Atari has never looked brighter – a new portable out, a new machine that has features Amiga owners can only dream of, and a 64-bit games console. But still, companies like yours seem to be pulling away from the ST. Even the size of the magazine has fallen drastically. The future looks bright, but at the moment we've got to keep our umbrellas up. Atari will rise again.

Chris Heathcote, Chelmsford

– Alright, it's time to lay this particular myth to rest. We don't deliberately reduce the size of ST FORMAT. We rely on advertising revenue to pay for the printing costs of a magazine. The page count, therefore, is directly related to the number of ad pages we sell.

If advertisers choose not to flog their wares through our magazine this means that we have to drop the size of the issue. Thus it is that during the quiet summer months we have smaller issues because advertisers don't think you lot buy software or hardware during those months. However, it soon picks up again towards the end of the year. Besides this, we are actually doing more editorial pages per issue than we were at this time last year – and issue 34 was absolutely enormous.

Oh and what did you mean, Atari will rise again?

Twilight zone

The one thing you can depend on is that things will change. One minute, the Soviet Union is one of the world's superpowers; the next minute, there's a new Editor on *ST FORMAT*. Makes you think. Well, almost

HAPPENING NEXT MONTH

The sun will rise, beam down for a while and set and *ST FORMAT* will hit the shelves of your local news emporium for another four week run.

You've come to expect stunning features from us and the September issue will be no exception. We've come up with an antidote for the summertime blues in the form of 15 projects for you to try out on your ST. There will be something for everyone, from music to art, from programming to house-keeping.

The big game next issue is *Fire and Ice*. The game has been programmed by Andrew Braybrook (top flight programmer) and should be excellent. However, read the full review first and we'll let you know

whether or not you should part with your loot. If you've ever wondered just what makes the Mega STE mega, check out Clive Parker's extensive dirty overalls and nuts and bolts technical feature. He's uncovered some funky aspects to Atari's newest machine which you might not know about. On top of that there's the usual selection of definitive reviews, ST Answers tips and another part to our music series. The next issue's going to be an absolute belter, so nip down to the local corner shop on Thursday 13 August, look your newsagent in the eye and request – nay, demand a copy, then you'll see just how right we are. (Your newsagent will also think you're a very commanding individual!)

ST FORMAT in short supply?

A word to the wise: Britain's top ST magazine is going "firm sale" for the summer – a distribution nicety that means your newsagent might order only as many copies of *STF* as he's sure of selling – so it could sell out before you even get in the door!

If there isn't a copy on the shelf, ask for *ST FORMAT* by name. There may be one in the back room. If not, check a big news-

agent like John Menzies or WH Smith. No luck? Then call Kate Elston on 0225 442244 and she'll sort it all out!

You could of course spare yourself this trauma by subscribing – see page 40 for some good reasons why you should – or you could fill in the form below and hand it to your newsagent, who'll be delighted to reserve you a copy. Before it's too late.

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Please reserve me a copy of *ST FORMAT* every month, beginning with the September issue, out Thursday 13 August.

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OBITUARY NOTICES

A few people have left *ST FORMAT* over the past months, but this month takes the biscuit, dunks it in the tea and eats it. No less than three bods are leaving the magazine as from this month. NOTE: If you don't give a toss, ignore this bit.

Firstly and perhaps even foremostly, Mark "Byron" Higham, Editor, is off. (Now you know why he was trying to flog his Mega ST on this page last month. Suddenly all becomes pathetically clear.) Mark's been on the magazine from way way back when it was still *ST/Amiga Format*, four years ago. In fact you could say his entire working life has been spent on the magazine. Sad, isn't it?

Mark was made Editor on issue 20 and *ST FORMAT*'s never looked back, but now the Higham lad is off to edit something called *PC Format*. The powers that be were worried about the manic way Mark would talk about "taking the ST beyond the Earth" and "the possibilities of ST/brain interlinking."

In case you were wondering, the new Editor is none other than Andy Hutchinson – but of course you already know that, unless you're the sort who starts reading at the back page. Long-term readers may remember that Andy was News Ed on the mag a while ago.

The second deserter is Games Editor Ed "Er, can I just change that caption?"

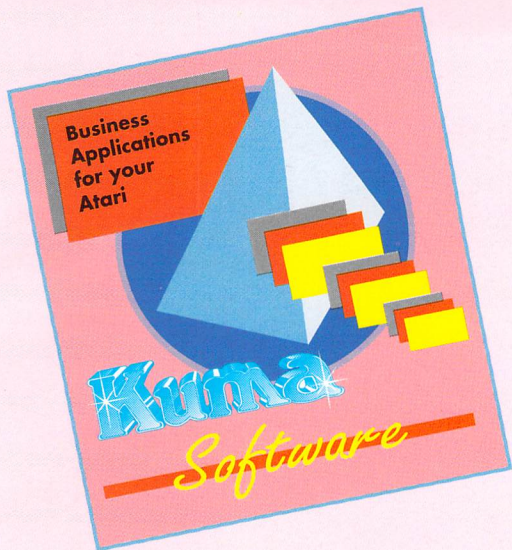
Ricketts, who's served since issue 21. Ed's cheeky grin and merry quip sadly never materialised during his time at *STF*, but he was renowned for the way he could re-use a caption without anyone noticing. Ed's going off to do something or other on a consoley thing called *Sega Power*. Apparently, "the mag won't be the same without him, because, er, he won't be here." Makes sense.

Finally, say bye-bye to Alex Soboslay, Production Editor, the shadowy man behind the scenes who ruined everyone's copy (shouldn't that be "corrected everyone's copy"? – Ed). Alex has been doing the job since issue 15 – 15! – but he got time off for good behaviour and was released before issue 50. Alex, who could spot a dangling participle at a distance of 100 words and surgically remove any trace of flabby writing without his fingers leaving the keyboard, is leaving to become a full-time pedant on a new magazine coming soon from Future Publishing – watch for details, er, eventually. His place is expertly and perhaps even pertly taken by our very own Paula Richards, whose nightly stage show is now a great success, apparently.

But rest assured, although the style of the magazine may change over the coming months, it'll still be (adopts *Sun* advert voice) Britain's biggest brightest read for your ST! (Oh dear.)

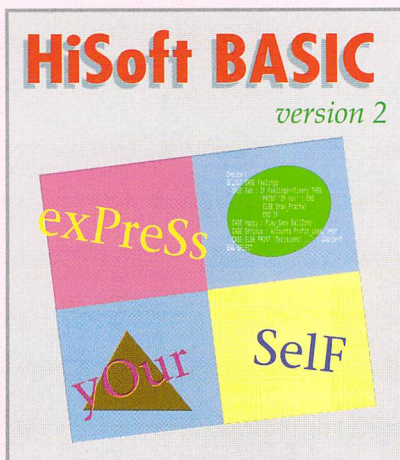
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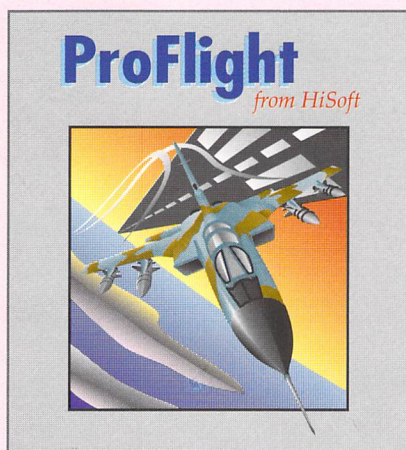
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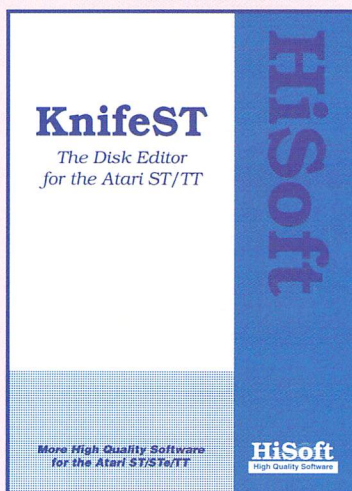
K-Spread 2 Cover Disk Users

If you obtained the excellent K-Spread 2 spreadsheet on the cover disk of last month's ST Format, you will be pleased to learn that you can still purchase the manual for only £29.95 and then upgrade to K-Spread 3 or K-Spread 4. Use the order form on the right and remember to send back your cover disk with your order - we will return this to you with your manual.

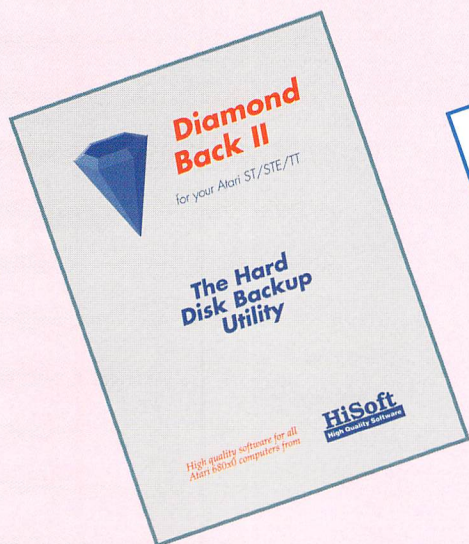
K-Spread 3 has many more Lotus-compatible functions (including database/statistical/financial operations), multiple worksheets, date/time calculations, loading of Lotus files, more extensive macro facilities etc. while K-Spread 4 offers all this plus live graphing (line graphs, pie charts etc.), forms design, enhanced sideways printing through GDOS and more.



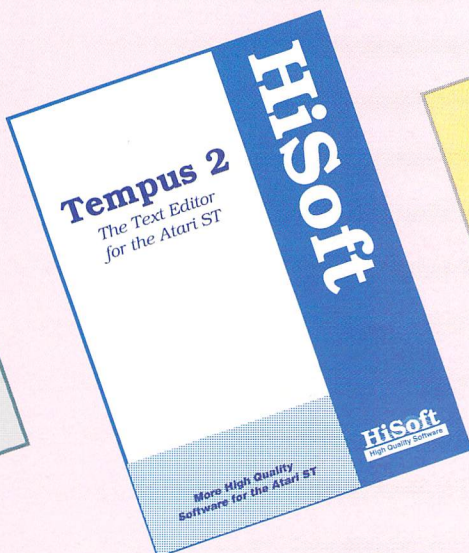
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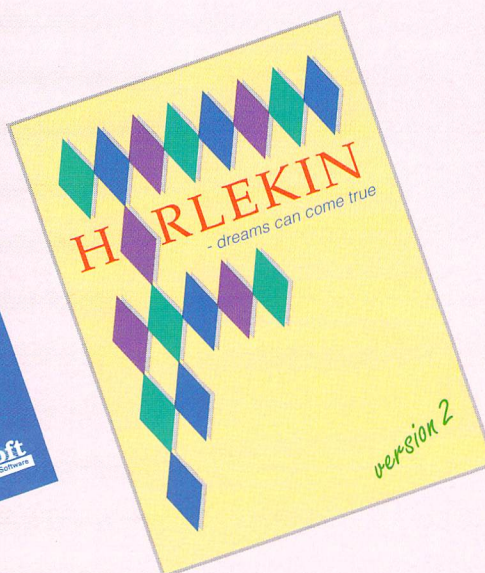
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